

United States District Court
Northern District of California

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

GPNE CORP.,
Plaintiff,
v.
APPLE INC.,
Defendant.

Case No.:12-CV-02885-LHK

**ORDER DENYING GPNE’S MOTION
FOR JUDGMENT AS A MATTER OF
LAW, OR FOR A NEW TRIAL;
DENYING APPLE’S MOTIONS FOR
JUDGMENT AS A MATTER OF LAW**

Re: Dkt. Nos. 572, 574, 575

On October 22, 2014, after seven days of trial and four and a half hours of deliberation, a jury concluded that Defendant Apple, Inc. (“Defendant” or “Apple”) did not infringe two patents owned by Plaintiff GPNE Corp. (“Plaintiff” or “GPNE”), and that GPNE’s patents were not invalid. *See* ECF No. 559 (Jury Verdict).

Before the Court are the parties’ post-trial motions. Specifically, GPNE seeks judgment as a matter of law on infringement, or in the alternative, a new trial. ECF No. 572 (GPNE JMOL Br.). Apple seeks judgment as a matter of law on its indefiniteness defense. ECF No. 574 (Apple

Indefiniteness JMOL).¹ For the following reasons, the Court DENIES each of the parties' requests.

I. BACKGROUND

A. Asserted Patents

GPNE alleges that Apple infringes U.S. Patent Nos. 7,570,954 (the "'954 Patent"), and 7,792,492 (the "'492 Patent") (collectively, "Asserted Patents").² The Asserted Patents share the same specification, which provides that the "invention pertains to communications paging, and particularly to two-way paging method and apparatus." '492 Patent at 1:32–33; *see also id.* at 1:66–67 (describing "[a] two-way paging system [that] utilizes four local frequencies for transmissions . . ."). The specification describes the use of "four local frequencies for transmissions between pager units and a central control station." *Id.* at 1:66–2:1. As set forth in the specification, frequencies one and two are used to transmit downstream, from the control station to the paging unit, while frequencies three and four are used to transmit upstream, from the paging unit to the control station. *See id.* at 1:66–2:9. This four frequency system enables two-way data communications between the paging unit and the control station. *Id.* at 1:66–2:9.

GPNE accuses nine Apple products of infringing the Asserted Patents. The accused Apple devices, certain models of Apple iPhones and iPads, allegedly infringe based on their compatibility with General Packet Radio Service ("GPRS") and Enhanced Data rates for GSM Evolution ("EDGE") networks,³ and/or Long-Term Evolution ("LTE") networks. GPRS, EDGE,

¹ Apple also filed a conditional motion for judgment as a matter of law as to obviousness. Apple requests that the Court address this motion only in the event that the Court grants GPNE's motion for judgment as a matter of law or for a new trial. *See* ECF No. 575 (Apple Obviousness JMOL), at 1. As the Court denies GPNE's motion in its totality, the Court also DENIES Apple's conditional motion as moot.

² GPNE had also alleged infringement of U.S. Patent No. 7,555,267 (the "'267 Patent"), but chose not to continue to assert the '267 Patent two weeks before trial. *See* ECF No. 411 ("On September 24, 2014 . . . GPNE sua sponte informed Apple and the Court that GPNE would voluntarily drop 2 asserted patent claims for trial."). The '267 Patent also shares the same specification as the Asserted Patents.

³ EDGE utilizes GPRS signaling, and therefore evidence as to GPRS functionality also applies to EDGE.

and LTE are standards for cellular communications promulgated by the telecommunications standard setting associations 3GPP and ETSI. According to GPNE, these communications standards rely on the two-way paging system disclosed in the Asserted Patents, and the accused devices' compatibility with these standards renders the accused Apple devices infringing.

B. Procedural Background

This litigation began in May 2012, when GPNE filed a complaint in the District of Hawaii against fifteen separate defendants, including Apple.⁴ ECF No. 1 (Compl.). Subsequently, the District Court in Hawaii severed GPNE's cases against each of the defendants in the Hawaii action and transferred several of the separate actions to this District. *See, e.g.*, ECF Nos. 246, 295; *GPNE Corp. v. Nokia Corp.*, Case No. 12-CV-00250 SOM RLP, ECF No. 14; *GPNE Corp. v. Pantech Co., Ltd. and Pantech Wireless, Inc.*, Case No. 12-CV-00251 SOM RLP, ECF No. 10; *GPNE Corp. v. Amazon Inc.*, Case No. 12-CV-00426 SOM-RLP, ECF No. 295; *GPNE Corp. v. Barnes & Noble, Inc.*, Case No. 12-CV-00249 SOM-RLP, ECF No. 246.

After holding a tutorial and claim construction hearing on June 6, 2013, this Court issued an order construing disputed claim terms. *See* ECF No. 87 (Order Construing Claims). On February 27, 2014, Apple moved for summary judgment of noninfringement and invalidity. ECF No. 187. The Court held a hearing on Apple's motion for summary judgment on April 3, 2014. On April 9, 2014, the Court granted Apple's motion for summary judgment of noninfringement as to indirect infringement, and denied as to direct infringement. ECF No. 239 (Order on Summary Judgment). The Court also granted Apple's motion for partial summary judgment of invalidity as to claims 13, 18, 30, 31, and 39 of the '267 Patent for lack of written description and enablement. *Id.* at 22.

⁴ In its original complaint, GPNE named as defendants: Amazon.com, Inc.; Apple Inc.; Barnes & Noble, Inc.; Garmin Ltd.; Garmin International, Inc.; Nokia Corp.; Nokia, Inc.; Pantech Co., Ltd.; Pantech Wireless, Inc.; Research in Motion Ltd.; Research in Motion Corp.; Sharp Corp.; Sharp Electronics Corp.; Sony Ericsson Mobile Communications AB; and Sony Ericsson Mobile Communications (USA), Inc. *See* Compl. at 2.

1 Trial began on October 6, 2014. At trial, GPNE presented the following experts: Dr.
2 Esmael Dinan, Dr. Neil Birkett, and Michael Dansky. Dr. Dinan was GPNE's sole infringement
3 expert. Dr. Birkett testified as to the components and capabilities of the accused products,
4 including Cetecom testing. Mr. Dansky was GPNE's damages expert.

5 Apple presented the following experts: Dr. Sarah Wilson, Peter Rysavy, and Paul Meyer.
6 Dr. Wilson testified as to noninfringement. Mr. Rysavy testified as to Apple's defenses of
7 obviousness and invalidity. Mr. Meyer was Apple's damages expert.

8 The trial lasted seven days, and the jury deliberated for four and a half hours before
9 returning a verdict. The jury found that none of the accused Apple products infringed Claim 44 of
10 the '492 Patent or Claims 19 and 22 of the '954 Patent. *See* Jury Verdict. The jury also found the
11 claims to be not invalid. *Id.*

12 **II. LEGAL STANDARD**

13 Rule 50 permits a district court to grant judgment as a matter of law "when the evidence
14 permits only one reasonable conclusion and the conclusion is contrary to that reached by the jury."
15 *Ostad v. Oregon Health Sciences Univ.*, 327 F.3d 876, 881 (9th Cir. 2003). A party seeking
16 judgment as a matter of law after a jury verdict must show that the verdict is not supported by
17 "substantial evidence," meaning "relevant evidence that a reasonable mind would accept as
18 adequate to support a conclusion." *Callicrate v. Wadsworth Mfg.*, 427 F.3d 1361, 1366 (Fed. Cir.
19 2005) (citing *Gillette v. Delmore*, 979 F.2d 1342, 1346 (9th Cir. 1992)). The Court must "view the
20 evidence in the light most favorable to the nonmoving party . . . and draw all reasonable inferences
21 in that party's favor." *See E.E.O.C. v. Go Daddy Software, Inc.*, 581 F.3d 951, 961 (9th Cir. 2009)
22 (internal quotations and citations omitted).

23 A new trial is appropriate under Rule 59 "only if the jury verdict is contrary to the clear
24 weight of the evidence." *DSPT Int'l, Inc. v. Nahum*, 624 F.3d 1213, 1218 (9th Cir. 2010). A court
25 should grant a new trial where necessary "to prevent a miscarriage of justice." *Molski v. M.J.*
26 *Cable, Inc.*, 481 F.3d 724, 729 (9th Cir. 2007).

III. GPNE'S MOTION FOR JUDGMENT AS A MATTER OF LAW, OR IN THE ALTERNATIVE, A NEW TRIAL

GPNE makes several arguments in support of its motion for judgment as a matter of law, or, in the alternative, a new trial. GPNE first argues that the Court made five errors related to the claim term "node." GPNE then argues that Apple did not present substantial evidence of noninfringement on the "independent paging network" aspect of "node," or on the following limitations: "count value," "clocking/aligning signal," or "differing frequencies." In addition to responding to these arguments, Apple also contends that the jury could have reasonably discredited Dr. Dinan's testimony and concluded that GPNE failed to satisfy its burden of proof as to infringement. The Court addresses each argument in turn, beginning with GPNE's "node" arguments.

A. GPNE's Arguments Related to "Node"

GPNE's five arguments related to the term "node" are that: (1) the Court failed to properly construe the term "node"; (2) the Court left the scope of the term "node" to the jury, in violation of *O2 Micro*⁵; (3) Apple made improper arguments to the jury about the scope of the term "node"; (4) Apple argued that the jury could apply a "person on the street" standard to the jury's infringement determination; and (5) the Court failed to properly instruct the jury regarding claim construction. GPNE JMOL Br. at 9–10. Apple disputes that there was any error with regard to "node," argues that certain of GPNE's arguments were waived, and finally argues that even if the Court erred with respect to "node," GPNE's motion should be denied. The Court addresses each argument in turn.

1. The Court Properly Construed the Claim Term "Node"

GPNE's first argument is that the Court's construction of the term "node" was improper. GPNE JMOL Br. at 9. The term "node" appears in each asserted claim, both in the preamble and in the body of the claim. For example, Claim 22 of the '954 Patent, which depends from claim 13,

⁵ *O2 Micro Int'l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351 (Fed. Cir. 2008).

reads in pertinent part:

13. A first **node** in a data network, the data network including a plurality of **nodes** including a first **node**, the first **node** comprising:

at least one processor;

a memory providing code to the at least one processor; and

an interface controlled by the at least one processor . . .

22. The first **node** of claim 13, wherein the interface is further controlled by the processor to:

transmit randomly generated information created by the first **node**; and

receive said randomly generated information returned from the communication controller to enable identification of the first **node**.

'954 Patent, cl. 13, 22 (emphases added).

In its claim construction briefing, GPNE proposed construing “node” as “a device in a network that can transmit and receive information.” ECF No. 69 (Opening CC Br.) at 3. Apple proposed “a pager in a network operating independently of a telephone network.” ECF No. 72 (Resp. CC Br.) at 4. The dispute over the term involved both (1) whether a node was limited to a pager and (2) whether the node must operate independently from a telephone network. Order Construing Claims at 9.

The Court construed the term “node” as a “pager with two-way data communications capability that transmits wireless data communications on a paging system that operates independently from a telephone network.” Order Construing Claims at 9. GPNE argues that this construction errs in three respects: (1) the construction imports limitations from the specification; (2) the construction ignores the purpose of the invention; and (3) the construction violates principles of claim differentiation. GPNE JMOL Br. at 9–13. Apple argues that these arguments were waived, as GPNE failed to raise them in connection with the jury instructions, and that the Court’s claim construction is correct. Apple Opp. at 13–14.

The Court first reviews the construction of “node,” and concludes that the construction adopted at the *Markman* stage is correct. Next, the Court addresses Apple’s waiver arguments, and concludes that (1) GPNE never sought construction of the terms “pager,” “paging system,” or “telephone network”; (2) GPNE waived two of the claim construction arguments it now asserts; and (3) GPNE never sought reconsideration of the Court’s construction of “node,” and instead consistently advocated for an overbroad construction.

a. The Court’s Construction of “Node” is Correct

i. The Court correctly limited “node” to pagers

The Court correctly limited “node” to pagers. GPNE’s primary argument at the *Markman* stage, and in its post-trial briefing, is that the invention is not limited to legacy one-way pagers. GPNE JMOL Br. at 11; Opening CC Br. at 4–5. The Court agreed, and construed “node” as a two-way pager with specific network independence characteristics. Order Construing Claims at 9. GPNE’s contention that the Court limited node to pager “based entirely on the presence of the words ‘paging unit’ and ‘pager’ in the preferred embodiments” is both incorrect and unpersuasive. GPNE JMOL Br. at 12. As discussed in depth in the Court’s *Markman* Order, the Court used the term “pager” within the construction of “node” for at least the following eleven reasons:

1. The term “node” appears only in the claims, abstract, and title of the Asserted Patents;
2. The term “node” does not appear anywhere in the original parent patent, U.S. Patent No. 5,542,115 (the “’115 Patent”);
3. The term “pager” is used over 200 times in each Asserted Patent;
4. The Asserted Patents repeatedly refer to “the invention” or “this invention” as a “two-way paging” system. *See, e.g.*, ’276 Patent at 1:32–33; 14:14–15;
5. The “Related Art” portion of the specification discusses problems with prior art one-way and two-way pagers. ’267 Patent at 1:41–62;
6. The only exemplary embodiments in the specification describe “pager units.” ’267 Patent Figs. 2, 5, and 8.

7. The specification distinguishes pagers and cell phones. *Id.* at 5:31–35;

8. The specification provides no hint as to what a non-pager node could be;

9. The prosecution history refers to the invention as a pager with certain features that are indicative of a paging device in contrast to a cell phone or other device. ECF No. 72-10 at GPNE Corp. 00000323 (discussing light weight, compact size, and low power consumption of the invention);

10. GPNE’s expert, Dr. Dinan, testified that a person of ordinary skill would consider a “node” a “**pager type**” apparatus enhanced with pre-programmed software and appropriate hardware to allow for two-way data packet communications through a central control station.” ECF No. 69-6 (Dinan CC Decl.) ¶ 28 (emphasis added); and

11. At his deposition, Dr. Dinan further testified that the patent claimed an “enhanced **pager**.” ECF No. 72-6 (Dinan CC Depo.) at 126:2 (emphasis added).

Order Construing Claims at 9–15 (discussing support of the construction of node as pager).

Having reviewed the prior Order Construing Claims, the Court finds that GPNE does not present any convincing argument that the claimed nodes are not pagers with two-way data capability.

ii. The Court correctly limited node to devices that communicate “on a paging system that operates independently from a telephone network.”

The Court correctly limited nodes to devices that communicate “on a paging system that operates independently from a telephone network.” Order Construing Claims at 9. At the *Markman* stage Apple argued that a “node” could not be capable of use on a telephone network. *Id.* at 16. The Court disagreed, and acknowledged that while the claimed node could operate on both a telephone and pager network, the node must operate on a pager network that is independent of a telephone network. *Id.* at 16–17.

GPNE argues that this construction was in error and is only supported “by a single sentence” in the specification. GPNE JMOL Br. at 13. This argument is contradicted by the record. At the *Markman* stage, GPNE conceded that its node/pager must return a page without a

1 telephone call:

2 What is disclosed in the patents in suit is a device that ‘can transmit
3 and receive information’— two-way data packet communication
4 that can obviate the need for telephony voice calls to communicate,
which was necessary for one-way pagers of the time. **This is
undeniable.**

5 ECF No. 75 (Reply CC Br.) at 4 (emphasis added; footnote omitted). Moreover, GPNE’s Opening
6 Claim Construction Brief also conceded that “where the prior art required use of a telephone
7 system to return a page call, the two-way data communication system of the invention obviates
8 that need and can operate – to that extent – independent from the telephone network.” Opening CC
9 Brief at 6. At the *Markman* hearing GPNE’s counsel also confirmed that the patent “depicts the
10 design of a two way paging system which operates independently from the telephone systems for
11 wireless.” *Markman* Tr. at 93:16–18 (quoting an invention disclosure document in the ’267 Patent
12 file history, ECF. No. 69-7 at GPNECorp. 00000314).

13 As the Court explained in its Order Construing Claims, the Asserted Patents refer to a
14 “two-way paging system.” Order Construing Claims at 16–18. The inventors disclosed that this
15 system “operates independently from the telephone system for wireless data communication,” and
16 GPNE’s expert testimony supported the conclusion that “pager networks and telephone networks
17 are distinct and . . . the electronic componentry and programming that permits a device to
18 communicate on each is generally different.” *Id.* Consequently, the Court’s construction properly
19 included the two-way data communication feature of the claimed nodes, and permitted GPNE to
20 argue that a combination pager-telephone device infringed the claims, if the accused device met
21 the independent networks limitation.

22 Accordingly, based on the *Markman* submissions, oral arguments, and the post-trial
23 briefing, the Court rejects GPNE’s argument that the Court erred in construing the term “node.”
24 The construction of “node” as a “pager with two-way data communications capability that
25 transmits wireless data communications on a paging system that operates independently from a
26 telephone network” is correct. Order Construing Claims at 9.

b. Waiver Arguments

Apple's opposition brief heavily emphasizes GPNE's waiver of certain claim construction arguments. GPNE JMOL Opp'n at 13-15. Based on the briefing and the record, the Court agrees that (1) GPNE never sought construction of the terms "pager," "paging system," or "telephone network"; (2) GPNE waived two of the claim construction arguments it now asserts; and (3) GPNE never sought reconsideration of the Court's construction of "node," and instead consistently advocated for an overbroad construction.

i. GPNE never sought construction of terms within the construction of "node"

Apple argues that GPNE never requested a construction of the terms "pager," "paging system," or "telephone network," which are in the Court's construction of "node." GPNE JMOL Opp'n. at 14. GPNE takes the position that because its own proposed construction did not include the terms "pager," "paging system," and "telephone network" GPNE was not required to propose any further construction of those terms. *See* GPNE JMOL Reply at 7 ("Apple's argument makes no sense; GPNE at all times sought a construction of the term "node" that did not include "pager" or "paging system" whatsoever.")).

GPNE's briefing belies this argument. Each of the five alleged errors regarding "node" deal with the "pager" terms. GPNE JMOL Br. at 9–10. In fact, GPNE's entire *O2 Micro* argument is premised on the argument that the Court should have further construed "pager." *See* GPNE JMOL Br. at 14 ("Having chosen the words "pager" and "paging system" for the construction of the claim term "node," it was still error to leave the scope of those terms undefined when presented to the jury.)). However, the Court agrees with Apple that GPNE's arguments suggesting that the Court should have construed "pager," "paging system," and "telephone network" were waived as GPNE never requested construction of those terms. *See Hewlett-Packard Co. v. Mustek Sys., Inc.*, 340 F.3d 1314, 1320–21 (Fed. Cir. 2003); *see also* GPNE JMOL Reply Br. at 7 (recognizing that GPNE never sought construction of pager, paging system, or telephone network). GPNE failed to raise the issue at the *Markman* stage, in the Joint Pretrial Statement, and

1 in connection with the jury instructions.

2 Beginning at the *Markman* stage, the words “pager” and “telephone network” were at
3 issue. Apple’s proposed construction of “node” was “a pager in a network operating independently
4 of a telephone network.” Resp. CC Br. at 4. At the *Markman* hearing the Court specifically asked
5 the parties to address the issue of whether “pager” would need to be construed. *See Markman* Tr.
6 at 81:19–82:2 (“Are we going to need to have a subsequent claim construction [of the] term
7 [pager]?”). In response, Apple contended that the question of what a pager was to a person of
8 ordinary skill in the art at the time would be a “fact-based issue,” and therefore not require
9 additional construction. *Id.* at 85:10–15. When GPNE interjected, GPNE objected only to Apple’s
10 arguments regarding the plain and ordinary meaning of the “independent of a telephone
11 [network]” language, but failed to otherwise address or dispute Apple’s contention that whether
12 the accused devices were “pagers” was a factual dispute that did not go to the scope of the claims.
13 *See id.* at 88:5–89:25. To the contrary, GPNE told the Court that “if you call it a ‘[two-way]
14 paging system,’” that would be “perfectly fine.” *See Markman* Tr. at 89:12–17.

15 Next, as Apple points out, GPNE failed to raise the “pager” issue in the parties’ statement
16 of “Disputed Legal Issues” within the Joint Pretrial Statement. Apple JMOL at 14 (citing ECF No.
17 305 (Joint Pretrial Statement) at 9–11). Apple’s list of issues included a claim construction dispute
18 over the terms “slot” and “packet.” *Id.* at 10. GPNE did not raise any claim construction issues,
19 including any issues related to “node” or “pager.” *Id.*

20 Furthermore, as set forth below, a review of the parties’ submissions to the Court on the
21 jury instructions confirms that GPNE did not seek further clarification of the terms “pager,”
22 “paging system,” or “telephone network,” and instead only advocated for its original construction
23 of node halfway through trial. *See* ECF No. 505 (Objections to Final Annotated Jury Instructions)
24 at 2 (“As the Court is aware, at *Markman*, GPNE proposed construing the claim term “node” as “a
25 device in a network that can transmit and receive information.” *See* Dkt. 69 at 3. GPNE maintains
26 that this construction was the proper one.”). In the parties’ various versions of their “Joint

Proposed Jury Instructions,” and in GPNE’s objections to the Court’s jury instructions, GPNE either accepted the Court’s construction of “node” and requested that the Court instruct the jury to apply plain and ordinary meaning to “pager,” or requested that the Court adopt GPNE’s original proposed construction. *See* Objections to Final Annotated Jury Instructions at 1–5.

Specifically, in the first Joint Proposed Jury Instructions, filed June 19, 2014, GPNE proposed instructing the jury that “node” means “pager with two-way data communication capability that transmits wireless data,” while Apple proposed including the Court’s entire construction of “pager with two-way data communications capability that transmits wireless data communications on a paging system that operates independently from a telephone network.” ECF No. 316 (Joint Proposed Jury Instructions) at 50. GPNE offered no additional or contrary proposals.

In the next set of proposed jury instructions, filed June 25, 2014, the parties agreed to include the Court’s entire construction of “node.” ECF No. 320 (First Amended Joint Proposed Final Jury Instructions) at 22. Again, GPNE offered no additional or contrary proposals. The parties also agreed that the Court should instruct the jury that “For claim language where I have not provided you with any meaning, you should apply the claim language’s plain and ordinary meaning.”

The parties submitted Second Amended Joint Proposed Final Jury Instructions on July 15, 2014, where the parties again agreed to the Court’s construction of node and the plain and ordinary meaning instruction. ECF No. 335, at 22. As with the previous two sets of proposed jury instructions, GPNE offered no additional or contrary proposals with respect to “node.”

It was three months later,⁶ on October 13, 2014, during the second week of trial that GPNE first requested that the Court instruct the jury to apply the “plain and ordinary meaning to a person

⁶ In the intervening three months, Plaintiff GPNE filed a stipulated administrative motion seeking to withdraw four law firms and the corresponding attorneys of record. ECF No. 355. On July 22, 2014, GPNE’s trial counsel, attorneys from the law firm of Susman Godfrey LLP entered notices of appearance for the first time in the instant litigation. *Id.*; *see* ECF Nos. 350, 352–53.

of skill in the art after reading the entire patent and file history” to the terms “pager” and “paging system.” ECF No. 461 (Third Joint Amended Proposed Jury Instructions) at 25–26. GPNE also requested additional language purporting to explain the Court’s construction of “node.” The propriety of this request is discussed further *infra*. Apple objected to this new, additional language. *See id.* at 30–31. On October 18, 2014, the Court issued tentative final jury instructions, which included the Court’s full construction of “node” and instructed the jury to apply the “plain and ordinary meaning” to unconstrued claim terms. ECF No. 501 (Final Annotated Jury Instructions [Tentative]) at 24.

GPNE’s next submission, on October 19, 2014, “maintain[ed]” that its construction of “node” as “a device in a network that can transmit and receive information” was correct. Objections to Final Annotated Jury Instructions at 2. These submissions, from October 13 and October 19, 2014, were GPNE’s first objections in connection with the jury instructions on claim interpretation or on the construction of “node.”

After considering GPNE’s submissions, the Court instructed the jury that “For claim language where I have not provided you with any meaning, you should apply the claim language’s plain and ordinary meaning to a person of ordinary skill in the art at the time of the invention.” ECF No. 529 (Final Annotated Jury Instructions) at 24. Although GPNE had belatedly objected to the Court’s construction of “node” halfway through trial, the Court overruled GPNE and used the construction of “node” adopted at the *Markman* stage.

In sum, the Court concludes that GPNE failed to request a construction of “pager,” “paging system,” or “telephone network,” over the course of more than two years: from the Court’s August 13, 2013 Order Construing Claims until the second week of trial when GPNE first objected to the Court’s instructions on claim interpretation or the construction of “node” on October 13, 2014. Accordingly, the Court agrees with Apple that GPNE’s arguments requesting construction of “pager,” “paging system,” or “telephone network” are waived.

ii. GPNE raises two new claim construction arguments in its briefing

GPNE's motion for Judgment as a Matter of Law raises three arguments related to the construction of "node": (1) the Court improperly imported limitations from the specification or preferred embodiments into the claims; (2) the Court's construction ignored the purpose of the invention; and (3) the Court's construction violated principles of claim differentiation related to the '115 Patent, the parent patent of both Asserted Patents. GPNE JMOL at 10–14.

GPNE's first argument, that the Court's construction improperly imported limitations from the specification, is not waived, and was the central argument raised at the Markman stage. However, this argument is not persuasive, as explained *supra*. The latter two claim construction arguments were not raised at the *Markman* stage or in briefing regarding the jury instructions. GPNE provides no citation to prior efforts to raise the latter two arguments, and does not otherwise argue that it properly preserved those arguments for post-trial consideration. The Court therefore concludes GPNE's arguments with respect to the purpose of the invention and claim differentiation are waived. *See Cordis Corp. v. Boston Scientific Corp.*, 561 F.3d 1319, 1331 (Fed. Cir. 2009) ("[L]itigants waive their right to present new claim construction disputes if they are raised for the first time after trial," quoting *Conoco, Inc. v. Energy & Envtl. Int'l, L.C.*, 460 F.3d 1349, 1359 (Fed. Cir. 2006)). A party may not raise new claim construction arguments for the first time in post-trial briefing. *See also Cordis*, 561 F.3d at 1331 (finding that district court correctly declined to consider new claim construction arguments raised in a JMOL brief). Accordingly, the Court does not address these arguments.

iii. GPNE never sought reconsideration of the construction of "node"

Finally, the Court notes that GPNE never sought reconsideration of the construction of "node." Indeed, GPNE has consistently tried to avoid any limiting construction of "node" in an effort to maintain as much breadth as possible in the claims.

At the *Markman* stage, GPNE interpreted the term "node" broadly, in an effort to capture diverse after-arising technology. *See, e.g., Markman* Tr. at 80:14–16 ("It's just some broad term to

describe any electronic device that transmits and receives, over the radio, and is capable of being programmed with this unique protocol.”). In addition to smartphones and cell phones, GPNE also wanted to capture Amazon’s e-readers within the scope of “node.” *See Markman* Tr. at 59:13–21 (Amazon’s counsel confirming that GPNE accused Amazon e-readers that use GPRS networks).

Accordingly, GPNE proposed a construction of “a device in a network that can transmit and receive information.” Opening CC Br. at 3. As evidence of the breadth of this construction, GPNE acknowledged at trial that it sought licenses from “farms,” “dairies,” “insurance companies,” “soda companies,” “butter makers,” “chocolate makers,” “bakeries,” “cell phone makers,” and “trucking companies.” *See* Tr. at 436:15-438:7. GPNE acknowledged that it sought licenses from these companies “because all of them conform to the GPRS standard.” *Id.* at 443:8-9.⁷

Given GPNE’s desire to maintain an overbroad construction of “node,” its arguments that the Court’s construction did not provide “fixed, unambiguous, legally operative meaning to the claim,” *Liquid Dynamics Corp. v. Vaughan Co.*, 355 F.3d 1361, 1367 (Fed. Cir. 2004), are especially unpersuasive, as discussed *infra*.

2. The Court Did Not Leave the Scope of the Terms “Pager” and “Paging System” to the Jury

GPNE’s second argument is that the Court left the scope of the term “node” to the jury, in violation of *O2 Micro*. GPNE JMOL Br. at 14. GPNE focuses on the terms “pager” and “paging system” within the construction of “node,” and argues that the “parties heavily contested the ‘ordinary’ meaning of ‘pager’ and ‘paging system,’” necessitating a construction of those terms. GPNE Reply Br. at 4. GPNE argues that the construction of “node” was not fixed because “the

⁷ Following the Court’s Order Construing Claims, some of GPNE’s potential licensees refused to take a license, or offered to settle for a very small amount. *See* Tr. at 448:19-449:17 (acknowledging that GPNE believed “ABC Supply Company” infringed based on the company “having a trucking fleet,” and offering to settle for \$5,000 following this Court’s Order Construing Claims); *id.* at 445:22–446:17 (testimony that Darling International refused to take a license based on the construction of “node”).

parties disputed fundamental questions including *inter alia* whether a ‘pager’ operated on a cellular network vs. a simulcast network, used low power vs. high power, and transmitted high data rates vs. low data rates.” GPNE JMOL Reply Br. at 3. Having reviewed the Federal Circuit’s statements on the specificity required in claim construction, the Court does not find this argument persuasive, and concludes that the construction of node, including the use of the terms “pager,” “paging system,” and “telephone network” provided a “fixed, unambiguous, legally operative meaning to the claim.” *Liquid Dynamics Corp. v. Vaughan Co.*, 355 F.3d 1361, 1367 (Fed. Cir. 2004).⁸

At the outset, as discussed *supra*, the Court notes that GPNE never requested that the Court provide a more detailed construction of “pager” or “node” until well into the trial. *See* Third Joint Amended Proposed Jury Instructions at 25–26. This delay significantly diminishes the persuasive value of GPNE’s *O2 Micro* argument. *Function Media, L.L.C. v. Google, Inc.*, 708 F.3d 1310, 1325 (Fed. Cir. 2013) (distinguishing *O2 Micro* and noting that “[i]n *O2 Micro*, the parties disagreed *during claim construction*.”) (emphasis added). The Federal Circuit has held that “district courts are not (and should not be) required to construe every limitation present in a patent’s asserted claims,” *O2 Micro*, 521 F.3d at 1362, especially where the parties do not raise a dispute until after the *Markman* stage. *See Verizon Servs. Corp. v. Cox Fibernet Virginia, Inc.*, 602 F.3d 1325, 1334 (Fed. Cir. 2010) (“Unlike *O2 Micro*, where the scope of a specific claim term was in dispute beginning at the *Markman* hearing and continuing throughout the trial, Verizon never identified at any time during the proceedings before the district court any specific claim term that was misconstrued or that needed further construction.”). As in *ePlus, Inc. v. Lawson Software, Inc.*, 700 F.3d 509, 520 (Fed. Cir. 2012), “if [GPNE] desired such a narrow definition, it

⁸ Later cases have also held that terms within a court’s construction must be sufficiently clear. *See Advanced Fiber Technologies (AFT) Trust v. J & L Fiber Servs., Inc.*, 674 F.3d 1365, 1373–74 (Fed. Cir. 2012) (court should resolve disputes over “a claim term or a disputed term within a claim construction”); *Edwards Lifesciences LLC v. Cook Inc.*, 582 F.3d 1322, 1334 (Fed. Cir. 2009) (district court correctly clarified term within construction).

could (and should) have sought a construction to that effect. In the absence of such a construction, however, the jury was free to rely on the plain and ordinary meaning of the term.”

Second, the Court finds *O2 Micro* distinguishable. In *O2 Micro*, the Federal Circuit held that the district court erred in failing to construe the claim limitation “only if,” because the parties’ claim construction dispute went to the scope of the claim. 521 F.3d at 1352. More specifically, the claims in *O2 Micro* required that a “feedback control loop circuit control the conduction state of the switches ‘only if said feedback signal is above a predetermined threshold.’” *Id.* at 1356. The defendants’ noninfringement theory was based on the fact that the accused products’ feedback control loop circuits would briefly continue to control the conduction state of the switches even after the feedback signal fell below a predetermined threshold. *Id.* at 1356–57. At *Markman*, the defendants argued that the district court should construe “only if” to mean either “exclusively or solely in the event that” or “never except when.” *Id.* at 1357. Instead, the district court declined to construe the limitation, and the parties presented expert testimony and argument to the jury “regarding whether or not the ‘only if’ claim language allowed exceptions.” *Id.* at 1365. As the parties had presented a “fundamental dispute regarding the scope of a claim term,” the district court erred as a matter of law in failing to resolve it. *Id.* at 1362.

Here, in contrast, the Court did construe the operative claim limitation: “node.” Much of GPNE’s argument is based on ignoring the entirety of the Court’s construction. The Court did not construe “node” as “pager.” Instead, the complete construction, which was provided to the jury, is a “pager with two-way data communications capability that transmits wireless data communications on a paging system that operates independently from a telephone network.” Order Construing Claims at 18–19; Final Jury Instructions at 24. This is significant because at the *Markman* hearing the parties both recognized that the network issue would be central to determining whether a device was a pager. Apple’s counsel represented that “[i]f we’re setting up a construction of the term ‘pager,’ then we would look to what kind of network does that device connect to? What kind of componentry is within that device? What kind of data would it be

capable of sending and receiving?” *Markman* Tr. at 85:2–6. The issue of how to interpret the term “pager” consistently circled back to the issue of whether the accused device “is intended to operate independent of a telephone network.” *Id.* at 85:21–22.

Moreover, GPNE did not dispute that the additional network language would clarify what a pager is, and did not contest Apple’s argument that this was a fact issue that would turn on whether the accused devices operate independently from a telephone network. *See id.* at 85:10–15, 88:5–89:17. Unlike in *O2 Micro*, where the failure to construe a limitation materially impacted the scope of the claim, here the Court’s construction as a whole provided a clear issue of infringement for the jury to decide. Order on Summary Judgment at 8 (“The infringement question presented here, then, is whether a ‘pager’ can use GPRS and LTE systems.”); *see also Lazare Kaplan Int’l v. Photoscribe Techs., Inc.*, 628 F.3d 1359, 1376 (Fed. Cir. 2010) (“[T]he parties’ dispute concerns factual questions relating to the test for infringement and not the legal inquiry of the appropriate scope of the [relevant] limitation.”).

Third, to the extent GPNE now argues that the definition of “pager” was in dispute, the Court concludes that GPNE’s complaints do not relate to the scope of the claims, but to the application of the construed claims to the accused devices. Under these circumstances, *PPG Indus. v. Guardian Indus. Corp.*, 156 F.3d 1351 (Fed. Cir. 1998), is instructive. In *PPG*, the patentee alleged infringement of a glass composition. 156 F.3d at 1352. The relevant claim included the term “consisting essentially of,” which the district court construed as “the claimed glass invention has in it the ingredients that are specifically identified . . . Other ingredients may also be present . . . so long as those other unlisted ingredients do not have a **material effect** on the basic and novel characteristics of the glass.” *Id.* at 1354 (emphasis added). The patentee argued that whether an ingredient had a “material effect” was a matter of claim construction and should not have been put before the jury. *Id.* In affirming the district court’s construction and rejecting the patentee’s argument, the Federal Circuit noted that while claim construction must delineate the scope of the claimed invention, it does not mean that a court “may give a claim whatever additional precision

or specificity is necessary to facilitate a comparison between the claim and the accused product.” *Id.* at 1355. As in *PPG*, the Court here construed “node” with the “specificity and precision . . . warranted by the language of the claim and the evidence bearing on the proper construction.” *Id.* That there is “some inherent imprecision resulting from the use of the term” is a “necessary consequence of treating infringement as a question of fact,” not an indication that the Court needed to further construe its construction of “node.”

In further support of this argument, GPNE cites to Apple’s opening statement, where counsel for Apple accused GPNE of “stretching their claims.” Tr. at 216:17. Apple also elicited testimony from its witness suggesting the GPNE was “stretching” the claims. See *id.* at 1760:22-24 (Apple’s closing); *id.* at 1303:5-7 (Dr. Rysavy: “My assignment was to determine if . . . GPNE’s pager patents were valid if they were stretched to cover cell phones.”); *id.* at 1387:19-20 (A. “if you stretch the pager claims to cover phones, then the GSM is prior art.”). GPNE argues that by referring to “stretching” the claims, Apple was improperly arguing claim scope. Reviewing these statements in context, however, shows that Apple was arguing to the jury that if the jury found that iPads and iPhones were pagers within the claims (i.e. if the jury found infringement), then the jury should also find that the Asserted Patents were invalid. This argument did not ask the jury to stretch or narrow the claims, but rather to be consistent in applying the maxim “[t]hat which infringes, if later, would anticipate, if earlier.” *Peters v. Active Mfg. Co.*, 129 U.S. 530, 537 (1889). The “stretching” statements do not suggest that the scope of the term “pager” was left to the jury.

Indeed, that this is a dispute over whether the accused devices infringe rather than a dispute as to claim scope, as was the case in *PPG*, is evidenced by GPNE’s arguments at the summary judgment stage. In opposition to Apple’s motion for summary judgment, GPNE focused on the additional clarifying language “independently from the telephone network” in the Court’s construction. Much of GPNE’s evidence in opposition to Apple’s motion for summary judgment of noninfringement involved showing that GPRS and LTE networks include paging functions that

are separate from their cellular functions. *See* Order on Summary Judgment at 9–10 (describing GPNE’s evidence). GPNE also presented evidence that a person of ordinary skill in the art would recognize that “modern-day cellular networks include paging technologies that allow devices on the networks to be properly called pagers” *Id.* at 9. In support of this argument, GPNE cited FCC documents, dictionary definitions, and testimony from Dr. Dinan. *Id.* at 9–10. Thus, there was no dispute at the summary judgment stage that whether the accused devices were pagers could be determined by looking to the network capabilities of the devices. After considering GPNE’s evidence, the Court denied Apple’s motion for summary judgment, concluding that “GPNE presents sufficient evidence for a reasonable jury to conclude that the accused devices are ‘pagers.’” *Id.* at 10.

Finally, as discussed further *infra*, any *O2 Micro* issue would be harmless error. As discussed below, the jury’s verdict of noninfringement could have been based on the jury’s reasonable determination that GPNE’s sole infringement expert was not credible or on GPNE’s failure to provide adequate proof on other claim limitations, including “count value,” the “aligning/clocking signal” and “differing frequencies.” Therefore, judgment as a matter of law or a new trial would not be warranted on an *O2 Micro* issue. *See, e.g., Moba, B.V. v. Diamond Automation, Inc.*, 325 F.3d 1306, 1313 (Fed. Cir. 2003) (finding that jury incorrectly imported a limitation into the claims, which required reversal because the imported limitation was the only possible basis for a finding of noninfringement).

3. Apple Did Not Make Arguments that Improperly Narrowed the Claim Scope

GPNE’s next argument is that Apple’s trial presentation focused on importing limitations into the claims in an attempt to redefine pager and paging systems. GPNE JMOL Br. at 15. GPNE argues that Apple (1) told the jury that “node” was limited to “one-way legacy beepers”; (2) Apple introduced evidence and elicited testimony that contradicted the Court’s prior Order on Summary Judgment; and (3) Apple argued prosecution history disclaimer to the jury. GPNE argues that all of this testimony adds up to Apple improperly narrowing the claim scope of “node.”

Turning to GPNE's first argument, GPNE's suggestion that Apple limited pagers to "one-way legacy beepers" is not supported by the record. *See, e.g.*, Tr. at 194:6 (Apple referring to the invention as a two-way pager). The only times the jury was told about legacy "beepers" was argument from GPNE's counsel and evidence from GPNE's expert, Dr. Dinan. In GPNE's opening statement, its attorney argued that the patents are not limited to "very old-fashioned beepers that you used to clip on." *Id.* at 183:6–7; *id.* at 183:17–18 (arguing that the claims are "not limited to a simple beeper-type device."); *id.* at 184-1. GPNE's counsel also elicited testimony from Dr. Dinan that the patents were not directed to "the same little Motorola beeper that I used to carry on my belt." Tr. at 516:2; *id.* at 715:14–15 ("The Patent figures do not describe that little beeper that you put on your belt."). GPNE does not cite to any testimony from Apple suggesting that the patents were limited to old-fashioned beepers. The testimony that GPNE does cite contrasts cellphones, cellular networks, pagers, and paging networks, which is proper for a jury to consider in evaluating whether the claims read onto the accused devices. For example, Apple's counsel argued that "Apple's phones are not pagers and they don't work with a paging system," *id.* at 211:10–11, and that "they [i.e., paging systems and telephone networks] operate in a completely different way," *id.* at 215:19–20. Testimony highlighting the difference between the claims as construed and the accused devices is proper.

As to GPNE's second argument, GPNE argues that Apple's arguments and evidence contradicted the Court's prior orders on Summary Judgment and Claim Construction. GPNE JMOL Br. at 8-9. GPNE argues that in denying summary judgment of noninfringement, "the Court repeatedly *rejected* Apple's argument that the term 'node' even when limited to a 'pager' capable of operating on a 'paging system' must exclude iPhones and iPads simply because they were not legacy beepers that operated on broadcast paging systems." *Id.* at 8 (emphasis in original). The Court's Order on Summary Judgment did not reject such an argument. GPNE's evidence at summary judgment showed that a person of ordinary skill might consider a smartphone with multiple features to be a pager. Order on Summary Judgment at 10. Therefore, the Order on

Summary Judgment properly found that whether the accused products “can be considered ‘pagers’ in addition to smartphones and tablets” was a question of fact for the jury. *Id.*

GPNE’s JMOL arguments misconstrue the effect of the Court’s denial of Apple’s motion for summary judgment, and are exactly why courts typically exclude reference to prior orders under Federal Rule of Evidence 403 as presenting a substantial risk of jury confusion and unfair prejudice. *See* ECF No. 319 (Pretrial Order re: Motion in Limine) at 1–2; *S.E.C. v. Retail Pro, Inc.*, No. 08CV1620-WQH-RBB, 2011 WL 589828, at *4 (S.D. Cal. Feb. 10, 2011) (granting motion in limine to exclude reference to summary judgment order). The Court’s Order on Summary Judgment did nothing more than find issues of fact for the jury. It did not resolve any fact-finding or issues of infringement in favor of GPNE. *See* Order on Summary Judgment at 10 (“Therefore, a genuine issue of material fact as to whether the accused devices are “pagers” remains for resolution at trial.”).

GPNE further faults Apple for arguing that the iPhone, which is obviously a phone, is not also a pager. Apple’s argument that the iPhone is not a combination pager-cellphone was entirely proper, as the Court’s prior rulings left that factual question of infringement for the jury. Apple’s support for its argument, including references to the prosecution history of the Asserted Patents, helped the jury to apply the plain and ordinary meaning of “node” to the accused devices, and thus was proper. *See, e.g., Wahpeton Canvas Co., Inc. v. Frontier, Inc.*, 870 F.2d 1546, 1552 (Fed. Cir. 1989) (affirming jury verdict of noninfringement as “[t]he jury had before it the prosecution history and testimony directed to” the absence of claim limitations in accused products).

As to the “operates independently from a telephone network” aspect of the Court’s construction, the issue of fact for the jury was whether the GPRS and LTE networks could operate independently of the GSM network. *See also* Order on Summary Judgment at 8 (“The infringement question presented here, then, is whether a ‘pager’ can use GPRS and LTE systems.”). Apple never suggested that the accused devices were not nodes because the devices send voice or other data, such as text messages, over the GSM telephone network. Rather Apple

presented evidence demonstrating that the GPRS and LTE data networks were not independent from the telephone networks.⁹ *See, e.g.*, Tr. at 1145:2–18 (“Q: Do Apple products work on paging systems that operate independently from a telephone network? A: Not at all.”). Moreover, Apple was entitled to argue that regardless of whether the accused devices are phones, the devices did not have the properties that allow a pager to function on a paging system that operates independently from a telephone network. *See id.* Accordingly, GPNE’s suggestion that Apple’s arguments narrowed the claim scope in violation of the Court’s prior Orders mischaracterizes Apple’s arguments at trial.

Third, GPNE argues that Apple improperly imported limitations into the claims and argued prosecution history disclaimer to the jury. GPNE JMOL Br. at 13. GPNE contends that Apple should not have been permitted to argue to the jury that the inventors distinguished between cell phones and pagers at the Patent Office. *Id.* GPNE points to testimony from Apple distinguishing cell phones and pagers, including arguments that “the inventors at GPNE told the patent office” that cell phones and pagers were different. Tr. at 215:23–216:3.

The Court does not agree that the record citations to which GPNE points show that Apple argued prosecution history disclaimer to the jury. As discussed *infra*, the Court never held that cell phones and pagers necessarily overlap, only that they *could* overlap. Order on Summary Judgment at 10. The inventors obviously recognized this in distinguishing the two and in separating their pager device and paging system from the telephone network. *See, e.g.*, Tr. at 299:3–12 (Gabriel Wong testifying on how GPNE believed its invention was an improvement over prior art cell phones and pagers). Thus, Apple was entitled to argue that cell phones and pagers have different capabilities and characteristics based on the differences between paging systems and telephone networks, and that pagers and cellphones would be considered different to one of ordinary skill in the art at the time of the invention.

⁹ As discussed *infra*, the jury could have reasonably concluded that Dr. Dinan’s testimony about the independence of GPRS and LTE from GSM was not credible.

The trial transcript reflects that Apple used the patentee's statements to the Patent Office to illustrate to the jury the differences between a cell phone and a pager at the time of the invention. Dr. Wilson explained how Gabriel Wong's description of the invention corresponded to the functionality of pagers and paging systems. For example, Dr. Wilson explained how Gabriel Wong's description of the invention as having "lower power consumption," "points to a paging system rather than a cellular phone . . . because cellular phones are always sending out information. . . . Pagers don't do that, so the battery can last weeks." Tr. at 1136:7–16. This was proper testimony to aid the jury in applying the claims to the accused devices. *See Wahpeton Canvas*, 870 F.2d at 1552. Indeed, the limitations that GPNE accuses Apple of importing into the claims, including that a pager has low data rates, high radiated power, long battery life, is lightweight, and uses simulcasting, come from the prosecution history of the Asserted Patents. *See also* ADX-320 (Dr. Wilson demonstrative listing differences between "paging system" and "cellular phone networks"). Specifically, Gabriel Wong's Rule 131 Declaration to Patent Office lists the following characteristics of his paging system:

1. Light Weight

Majority of the weight in a portable system is battery, by reducing power requirement, we can achieve a lighter communication device.

2. Compact

The size of a pager can be made smaller than cellular phone due to its simplify [sic] design in both the electronics and the size of the power supply needed.

3. Battery

Lower power consumption.

GPNECorp. 00000323. The Asserted Patents themselves also disclose the following paging system characteristics identified by Dr. Wilson:

- *Using FCC-allocated frequencies to communicate on a pager system. See '492 Patent at 14:14–18. This is also found in Dr. Wong's PTO submission. ECF No. 69-7 at GPNECorp. 00000314.*

- *Transmitting at a high power range.* The Asserted Patents disclose transmitting at 3 watts to 1000 watts. '492 Patent at 14:16. Dr. Wilson testified that the high power transmission also goes to whether a pager can receive a message in an elevator or basement. Tr. at 1150:12–25.
- *Simulcasting a signal.* Although the parties disputed the import of Figure 9 of the Asserted Patents, Dr. Wilson testified that simulcasting was a pager characteristic and Figure 9 showed a simulcasting system. Tr. at 1148:21–1149:12; 1158:1–17.

In conclusion, Apple's evidence aided the jury in applying the plain and ordinary meaning of the term "pager" to the accused devices. Although GPNE wished for a broader construction of node, the Court rejected the "device on a network" construction and limited node to "a pager with two-way data communications capability that transmits wireless data communications on a paging system that operates independently from a telephone network." This construction resolved the dispute over the scope of "node" and allowed the parties to argue whether the accused devices fell within the claims. Apple won that debate, as shown by the jury's verdict, and none of Apple's arguments or evidence requires granting a new trial.

4. Apple Did Not Apply an Improper "Person on the Street" Standard to Claim Terms

GPNE's next argument is that Apple argued to the jury that the terms "pager," "paging system," and "telephone network" should be interpreted as understood by a layperson. GPNE JMOL Br. at 21. Apple argues that this argument was waived when GPNE failed to object to the testimony GPNE cites as the basis for GPNE's argument. Apple further argues that GPNE actually introduced the "person on the street standard."

As a threshold matter, Apple is correct that it was GPNE's expert Dr. Dinan who, on direct examination, first introduced a "person on the street" standard. Tr. at 515:25–516:2 (Dr. Dinan: "Well, of course if you go on the street and ask someone, "what is a pager?" they're going to point you to the same little Motorola beeper that I used to carry on my belt.")). Dr. Dinan then presented further testimony on whether the accused devices were "pagers" that met the Court's construction of "node." Tr. at 554:1–17 (explaining that "In 1994, a person would consider a pager as a two-

way data communication device”); *id.* at 563:1–9 (explaining that iPhones and iPads transmit and receive data). This testimony illustrated for the jury the difference, according to GPNE, between a “layperson” and a “person of ordinary skill” interpretation of the claims. On cross-examination, Apple’s counsel elicited further testimony from Dr. Dinan on the difference between a pager according to a person on the street and a node under the Court’s construction. Tr. at 664:9–17 (comparing DTX 361 (Motorola pager) to Court’s construction); *Id.* at 665:10–12 (comparing iPad to Court’s construction). GPNE did not object to this line of questioning, nor to Apple’s questioning on what “people” in 1993–1994 would have considered to be a pager. *Id.* 665:13–666:11.

Moreover, the Court agrees with Apple that GPNE did not object to the testimony cited in support of GPNE’s argument that Apple invited the jury to apply an improper standard to interpretation of claim terms. GPNE cites testimony from Dr. Dinan on cross-examination, where Apple questioned Dr. Dinan on whether “in 1993 or 1994 . . . people would not have considered the iPad to be a pager?” *See* GPNE JMOL Br. at 21–22, citing Tr. at 665:10–667:23. GPNE made no objections to this testimony or line of questioning. *See* Tr. at 665:10–667:23 (showing GPNE made no objections). GPNE then cites to testimony that Apple elicited from non-technical witness, including GPNE’s damages expert, Mr. Dansky, and Apple’s Senior Director of Product Marketing, Mr. Casanova, on whether the accused devices were “pagers.” GPNE JMOL Br. at 22, citing Tr. at 945–947 (Apple questioning Mr. Dansky on whether he considered the accused devices to be “pagers”); *Id.* at 1079–80 (Apple questioning Mr. Casanova on whether the iPhone 4 and iPhone 5 were pagers). Although GPNE now argues that this testimony encouraged the jury to interpret claim terms from the perspective of a “person on the street” instead of a person of ordinary skill, the record shows that GPNE did not object to this testimony.

In addition to its “person on the street” argument, GPNE also contends that Dr. Wilson failed to apply the “ordinary meaning to one skilled in the art in light of the patent and file history from the time period of the invention.” Mot. at 21. At trial, Dr. Wilson testified that she reviewed

FCC and ETSI standard setting documents from beyond the 1993–1994 timeframe and referenced those documents. Tr. at 1160–61, 1169. GPNE objected to the FCC and ETSI documents on relevancy grounds, arguing that the standard setting documents post-date the patents, and thus are not relevant to the infringement analysis. In its motion, GPNE now argues that Dr. Wilson’s reference to the FCC and ETSI documents is proof that Dr. Wilson applied an improper standard to support her opinion that paging systems exclude cellular data networks. However, Dr. Wilson confirmed on cross-examination that she used the proper “person of ordinary skill at the time of the invention” standard in interpreting the claims. Tr. at 1266:2–6. Moreover, the Court overruled GPNE’s objections to the FCC and ETSI documents because the documents were relevant to the question of infringement, as evidenced by GPNE’s own reliance on similar FCC documents in GPNE’s summary judgment briefing. *See* Order on Summary Judgment at 10 (discussing GPNE’s evidence from the FCC).

In sum, none of the testimony cited by GPNE in GPNE’s JMOL briefing introduced error regarding the proper interpretation of the claims. Instead, the testimony shed light on the factual question of whether the accused devices met the claim limitation “node.” The bulk of Dr. Dinan’s testimony involved comparing the asserted claims to the GPRS and LTE standards, which is an issue of fact for the jury. Dr. Wilson’s testimony involved comparing the claims to the accused devices. In support of her testimony, Dr. Wilson relied on documents from standard setting bodies, on which GPNE also relied, and on FCC documents to aid her in comparing the accused devices to the claims as construed. This was proper testimony for the jury to consider in doing its infringement analysis.

Finally, any error in Apple’s trial presentation was cured by the jury instructions, which as discussed *infra*, instructed the jury to apply a person of ordinary skill in the art at the time of the invention standard. Final Jury Instructions at 23. The Court must assume that the jury followed the instructions, and so any error as to the testimony elicited about a layperson’s understanding of the claim terms was harmless. *Deck v. Jenkins*, 768 F.3d 1015, 1034 (9th Cir. 2014) (“[A] jury is

presumed to follow a judge's instructions. This is true even when a party provides contrary instructions.") (citation and quotation omitted).

5. The Court Properly Instructed the Jury

GPNE's final argument as to node is that the Court failed to properly instruct the jury when the Court did not include GPNE's requested jury instructions. GPNE JMOL Br. at 23–24.¹⁰ GPNE raises three points: (1) the Court erred in declining to include a supplemental instruction on "node"; (2) the Court should have instructed the jury to consider the entire file history of the Asserted Patents prior to deciding infringement; and (3) the Court's instruction did not tell the jury to apply plain and ordinary meaning to terms within a construction, i.e., "pager."

Turning to GPNE's first argument, GPNE requested the following instruction:

The Court's construction does not prohibit a "node" from being both a pager and a telephone. A pager could transmit certain communications on a paging system that operates independently from a telephone network while engaging in other types of communication on the telephone network.

Third Amended Joint Proposed Jury Instructions at 25; Dkt. No. 505 at 1. As discussed *supra*, the Court's construction of "node" adopted at *Markman* was correct. GPNE's further instructions on "node" would have expanded the Court's construction without providing any additional clarity to the jury.

More specifically, GPNE's first sentence, to instruct the jury that a "node" can be both a pager and a telephone, was unnecessary as Apple did not suggest that if the accused devices included both telephone and pager components the devices could not infringe. Instead, Apple argued that the accused devices would not be considered "pagers" by one of ordinary skill in the art, and that the accused devices did not operate independently of a telephone system. *See* GPNE JMOL Opp. at 23.

GPNE's second sentence, to instruct the jury that "[a] pager could transmit certain

¹⁰ The Court notes that GPNE did not mention this issue in its reply brief. *See* ECF No. 580 (GPNE JMOL Reply Br.).

communications on a paging system that operates independently from a telephone network while engaging in other types of communication on the telephone network” was duplicative of the Court’s construction, which already specified that a pager operates independent from a telephone network. Furthermore, the jury heard extensive testimony on how the GPRS and LTE networks interact with other networks. *See, e.g.*, Tr. at 692–69, 1277–84. It was not necessary to further instruct the jury as to what “operates independently” means. As discussed *infra*, Apple presented substantial evidence that the GPRS and LTE networks do not operate independently from a telephone network, which was evidence on which the jury was entitled to rely in finding noninfringement.

Accordingly, neither of GPNE’s requested instructions was necessary to correct an improper argument about the scope of the term “node,” and any error in failing to give the requested instructions was harmless. “A jury verdict will be set aside, based on erroneous jury instructions, if the party seeking to set aside the verdict can establish that those instructions were legally erroneous, and that the errors had prejudicial effect.” *Bettcher Indus., Inc. v. Bunzl USA, Inc.*, 661 F.3d 629, 641 (Fed. Cir. 2011) (quoting *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282, 1311 (Fed. Cir. 2005), *abrogated on other grounds by Zoltek Corp. v. United States*, 672 F.3d 1309 (Fed. Cir. 2012) (en banc)). Here, as GPNE has not shown a prejudicial effect from the instructions, the Court will not set aside the jury’s verdict.

As to GPNE’s second argument, GPNE argues that the Court erred in declining to include an instruction to apply plain and ordinary meaning “after reading the entire patent and file history.” ECF No. 461 at 25. The Court gave the jury the construction of “node,” among other terms, and further instructed the jury that “For claim language where I have not provided you with any meaning, the claim language’s plain and ordinary meaning to a person of ordinary skill in the art at the time of the invention applies.” ECF No. 549 (Final Jury Instructions) at 23.

GPNE’s contention that the Court should have instructed the jury to read the “entire patent and file history” is without merit. GPNE’s proposed instruction was improper, as GPNE’s

instruction would have essentially implied that the jury must read the entire patent and file history (hundreds of pages) before reaching a verdict. The instruction to apply ordinary meaning to a person of skill in the art at the time of the invention was consistent with the testimony the jury heard, with the arguments GPNE and Apple made, and with black letter claim construction law. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc) (words of a claim are generally given their ordinary and customary meaning, which is the meaning a term would have to a person of ordinary skill in the art at the time of the invention).

Second, as Apple notes in its opposition, the more limited instruction that the Court gave was favorable to GPNE. Instructing the jury to consider the entire file history would have further highlighted Apple’s evidence as to what a person of ordinary skill in the art at the time the invention was made would consider to be a “pager.” As explained *supra*, Apple primarily relied on Gabriel Wong’s Rule 131 Declaration to Patent Office distinguishing pagers and cell phones. That declaration is part of the file history. In contrast, the Court’s instruction to apply the “plain and ordinary meaning to a person of ordinary skill in the art at the time of the invention” highlighted GPNE’s central theme at trial, which was that one of ordinary skill in 1993–1994 would not limit a pager to “legacy” pagers.¹¹ GPNE cannot show any prejudicial error in the jury instructions, and judgment as a matter of law or a new trial cannot be granted on that basis. *Bettcher Indus., Inc.*, 661 F.3d at 638.

Turning to GPNE’s final argument, that the instruction did not inform the jury to apply plain and ordinary meaning to terms within the Court’s instruction, GPNE JMOL Br. at 23–24, the Court finds GPNE’s argument is not supported by the trial record. The Court instructed the jury:

¹¹ Apple’s argument that the Court’s instruction to apply a person of ordinary skill *at the time of the invention* standard was improper is without merit. Apple would have left out any reference to the “time of the invention” or “person of ordinary skill,” and instead proposed instructing the jury to apply the “plain and ordinary” meaning of the terms not construed by the Court. *See* ECF No. 537 (Apple’s Objections to Final Jury Instructions) at 1–2. Apple even agreed at *Markman* that the parties would present evidence as to what a person of ordinary skill would consider a “pager.” *Markman* Tr. at 85:13–15 (“We could talk about what a pager is or isn’t in the perspective of one of ordinary skill in the art at the time that these patents were filed.”).

“For claim language where I have not provided you with any meaning, the claim language’s plain and ordinary meaning to a person of ordinary skill in the art at the time of the invention applies.” Final Jury Instructions at 23. GPNE’s counsel reiterated this standard in closing, highlighting the Court’s instruction: “If you look at the Court’s instructions that she’s given you, if you look at instruction number 20, she says right here, “For claim language where I have not provided you with any meaning, the claim language’s plain and ordinary meaning to a person of ordinary skill in the art at the time of the invention applies.” *Id.* at 1693:18–23; 1749:12–19 (same in rebuttal closing).

Furthermore, as Apple points out in its opposition, GPNE repeatedly argued to the jury that they should apply “the perspective of someone skilled in the art” to the terms “pager” and “paging system.” GPNE JMOL Opp’n Br. at 24. For example, Dr. Dinan told the jury that “for patents, we don’t look at the modern definition of the term . . . we have to ask ourselves what a person skilled in the art would consider what a pager or paging system is after that person reads the entire patent at the time of the invention.” Tr. at 1533:11–16. GPNE’s counsel also argued to the jury that the instruction supported Dr. Dinan’s testimony:

What the Court has not construed is what does it mean to use the word “pager”? Or “paging system”? Or “telephone network”?

And that determination is what Dr. Dinan has been explaining for eight hours on the stand. To determine that is not from the viewpoint of a person on the street. It’s from the viewpoint of someone highly skilled in wireless data communications who studies the patents and determines what was meant when Gabriel Wong used the term “pager” in those patents.”

Id. at 1695:11–23. Thus, read as whole in the context of the entire trial, the Final Jury Instructions informed the jury to apply the plain and ordinary meaning of the words “pager” and “paging system.” *Bettcher*, 661 F.3d at 638.

Accordingly, the Court denies judgment as a matter of law and a new trial based on GPNE’s challenges to the jury instructions. Having addressed each of GPNE’s five errors involving the term “node,” the Court turns to GPNE’s remaining arguments.

B. Even if the Court Erred Regarding “Node,” Neither Judgment as a Matter of Law Nor a New Trial is Warranted

For the reasons explained above, the Court did not err with regard to the construction of node as “pager with two-way data communications capability that transmits wireless data communications on a paging system that operates independently from a telephone network.” Order Construing Claims at 9. Regardless, even if the use of the term “pager” was error, a reasonable jury could have found noninfringement for several other reasons.

At trial, GPNE had the burden of proving that the accused devices meet each element of Claim 44 of the ’492 Patent and Claims 19 and 22 of the ’954 Patent. Apple argues that the jury could have found noninfringement based on the lack of credible expert testimony on infringement. Moreover, in addition to Apple’s arguments with respect to “pager” and “paging systems,” Apple also presented evidence at trial that the accused devices did not infringe based on the following limitations: the “operates independently from a telephone network” language within the construction of “node”; “count value”; “aligning/clocking signal”; and “differing frequencies.” The Court addresses these arguments in turn.

1. Expert Credibility

Apple opposes GPNE’s motion for judgment as a matter of law, or in the alternative, a new trial, by contending that the jury could have reasonably concluded that GPNE did not meet its burden of proof as to infringement as a general matter. As Apple explains, Dr. Dinan was GPNE’s sole expert as to infringement, and the jury could have reasonably discredited his testimony for at least three reasons: (1) Dr. Dinan’s statement that a Motorola pager was “absolutely not” a pager; (2) Dr. Dinan’s refusal to sign the protective order and subsequent lack of access to relevant confidential information; and (3) Dr. Dinan’s cursory dismissal of contrary evidence. Moreover, the jury could have credited the testimony of Apple’s expert, Dr. Wilson, who was a “person of ordinary skill in the art” at the time of the invention, and not credited the testimony of Dr. Dinan, who conceded that he was not a “person of ordinary skill in the art” at the time of the invention.

First, during cross-examination, Apple presented Dr. Dinan with a Motorola pager, which

Apple represented had two-way data communications capability and operated on a paging system independent of a telephone network. When asked whether the Motorola pager “was a pager” as described by the claims, Dr. Dinan responded “absolutely not.” Tr. at 664:9–665:12. According to Apple, Dr. Dinan’s statement was not only conclusory, but implausible in light of the parameters of Apple’s question, and inconsistent with Dr. Dinan’s prior testimony. More specifically, Dr. Dinan had agreed that the Motorola pager “transmits wireless data communications on a paging system that operates independently from a telephone network,” but still insisted, without explanation, that the Motorola pager did not meet the claim construction. Tr. at 664:25–665:9. On the other hand, when presented with an Apple iPad, Dr. Dinan declared that the iPad was “exactly” a pager. Tr. at 665:12.

Second, Apple cross-examined Dr. Dinan as to the basis of his infringement opinion. Dr. Dinan was barred from examining confidential documents that actually established the accused devices’ compatibility with the GPRS, EDGE, and LTE standards because Dr. Dinan refused to sign the protective order in the case. GPNE relied, instead, on the testimony of Dr. Birkett to establish that the accused devices complied with the GPRS, EDGE, and LTE standards, based only on third party testing and not on Dr. Birkett’s own testing. Dr. Birkett did not, however, offer any opinion as to infringement. At bottom, Apple’s strategy at trial relied on emphasizing that Dr. Dinan had not actually examined any of the evidence that could support his ultimate conclusion that the accused devices infringed GPNE’s patents, or that Dr. Dinan had even communicated with the sole GPNE expert who had examined the third party standards compliance testing:

Q: And you said over and over again, oh, the certification test, that helped you with your infringement opinions; right?

A: Yes.

Q: And you’re referring to Cetecom documents; is that right?

A: No. I don’t know the name Cetecom.

Q: Right. Because you’ve never reviewed a single one of those Cetecom certification documents; correct?

1 A: Well, I didn't need to. Dr. Birkett, another GPNE's expert,
2 reviewed those and I understand that Apple passed those
3 certification tests

4 Q: Sir, can you answer my question, you didn't look at the
5 certification documents; right?

6 A: No, I did not.

7 Q: Okay. So you said Dr. Birkett did, but Dr. Birkett is another
8 expert that GPNE hired in this case; right?

9 A: Yes.

10 Q: However, for whatever reason, you've never spoken with Dr.
11 Birkett about his opinions in this case; correct?

12 A. No, I have not spoken.

13 Q: So even though you say you're relying on him for this
14 certification business, you've never even had a conversation with
15 him about it; correct?

16 A: That's irrelevant because I wasn't allowed to --

17 Q: Can you answer my question, sir?

18 A: I said no.

19 Q: You've never talked to him?

20 A: I answered already. I said, no, that's irrelevant. I didn't need to
21 talk to him.

22 Tr. at 673:8–674:11. Moreover, the single GPNE expert that did evaluate confidential information,
23 Dr. Birkett, conceded that he did not speak with any Apple or third-party engineers, review any
24 source code, conduct any independent testing, or examine any documents other than the
25 confidential Cetecom test reports. *See* Tr. at 821:23–825:25. As Dr. Dinan's infringement analysis
26 depended on Dr. Birkett's review of the Cetecom test results, the jury could have also discredited
27 Dr. Dinan's opinions based on Dr. Birkett's testimony that:

28 Q. Okay. Sir, I asked you before GPNE hired you to be a testifying
expert in this case, did you have any experience analyzing Cetecom
test reports?

A. Not that I recall, no.

1 Q. No. The answer is no?

2 A. That's right.

3 Tr. at 826:24–827:4.

4 Third, Apple argues that the jury could have reasonably discredited Dr. Dinan's testimony
5 based on his dismissal of any evidence contrary to his position as "irrelevant." When questioned
6 as to whether Dr. Dinan had examined any documents from Apple or from the manufacturers of
7 the baseband processors,¹² or met with any Apple engineers, Dr. Dinan responded repeatedly with
8 the statement "That's irrelevant":

9 Q: You didn't talk to any Apple engineers; Correct?

10 A: No. That's irrelevant.

11 Q: You didn't look at a single Apple diagram; Correct?

12 A: That's irrelevant. No.

13 Q: You didn't look at a single Apple schematic?

14 A: No. That's irrelevant.

15 Q: You didn't look at any signal flow charts from Apple's
16 technology; Correct?

17 A: No.

18 Q: You didn't look at any source code from Apple; Correct?

19 A: No. That's -- these are irrelevant.

20 *See, e.g.*, Tr. at 670:7–672:1.

21 In contrast, Apple's noninfringement expert, Dr. Wilson, testified that she examined the
22 confidential Cetecom test reports, the deposition transcripts from Apple engineers, and technical
23 documents from Apple and third party manufacturers. *See* Tr. at 1125:17–1126:1. Dr. Wilson
24 relied on all of this evidence to reach her conclusion of noninfringement.

25 Finally, during cross-examination, Dr. Dinan conceded that he was not a person of

26 ¹² The baseband processors found within the accused devices are the smallest saleable patent
27 practicing unit. *See* ECF No. 242, *Daubert* Order at 24–25.

ordinary skill in the art at the time of the invention, but that Apple's noninfringement expert, Dr. Wilson, was a person of ordinary skill in the art at the time of the invention.

Q. All right. One last topic, Dr. Dinan. You've repeatedly said over and over again that we need to focus on one of ordinary skill in the art, and I think we're now focused on 1994. Is that right?

A. Yes.

Q. And you agree with me, sir, that you were not -- you were not a person of ordinary skill in 1994; correct?

A. That's right.

Q. However, Dr. Sarah Kate Wilson was a person of ordinary skill in 1994; correct?

A. I don't know.

Q. Well, she got her bachelor's degree in 1979. Do you remember that?

A. Okay.

Q. And she got her master's degree in 1987. Do you remember that?

A. Okay.

Q. And she got her Ph.D. from Stanford in 1994. Do you remember that?

A. I don't remember that, but I take your word on that.

Q. Well, assuming I'm correct, she was a person of ordinary skill in the art by 1994; correct?

A. That assumption, I'm not disputing that.

Tr. at 1640:18–1641:15. In combination with Apple's other attempts to discredit Dr. Dinan's testimony, the jury could have found Dr. Wilson to be a more credible expert because she was a person of ordinary skill at the time of the invention, and Dr. Dinan explicitly conceded that he was not.

The Court therefore agrees with Apple that, taken as a whole, the jury could have discredited Dr. Dinan's testimony as to infringement. Where there is contradictory expert

testimony, it is not unreasonable for the jury to discredit the testimony of a party's expert. *See, e.g., Retractable Techs., Inc.*, 653 F.3d at 1309. Here, the jury heard Dr. Dinan admit that he had not personally examined the accused devices' code, technical documents, or the evidence establishing that the accused devices were (1) compatible with the GPRS, EDGE, and LTE standards, and (2) capable of performing the functions required to show infringement. In conjunction with the noninfringement testimony provided by Dr. Wilson, Dr. Dinan's concession that he was not a person of ordinary skill at the time of the invention, and Apple's other attempts to discredit Dr. Dinan's testimony, the jury could have reasonably disbelieved Dr. Dinan. Moreover, GPNE's arguments in support of its motion for judgment as a matter of law "essentially ask [the Court] to credit its position on [infringement] over" Apple's position." *Ericsson, Inc. v. D-Link Sys., Inc.*, 773 F.3d 1201, 1224 (Fed. Cir. 2014). Here, the parties presented conflicting expert testimony on the question of infringement, and the jury had reasonable grounds to disbelieve GPNE's sole infringement expert. *See id.* at 1224–25; *see also i4i Ltd. P'ship v. Microsoft Corp.*, 598 F.3d 831, 848 (Fed. Cir. 2010) (holding that following conflicting expert testimony, "jury was free to disbelieve" one expert); *Kinetic Concepts, Inc. v. Blue Sky Med. Grp., Inc.*, 554 F.3d 1010, 1024 (Fed. Cir. 2009) (finding that a jury can accept the testimony it finds most persuasive). As GPNE had the burden to prove infringement, there is "no reason to disturb the jury's verdict." *Ericsson*, 773 F.3d at 1225.

2. "Operates Independently From a Telephone Network"

In addition to Apple's arguments with respect to expert credibility, Apple further contends that the jury could have found noninfringement based on four claim limitations: (1) the "operates independently from a telephone network" language within the construction of "node"; "count value"; "aligning/clocking signal"; and "differing frequencies." The Court begins by addressing the "operates independently from a telephone network" language within the construction of "node."

Each asserted claim includes the "node" limitation, which as discussed *supra* was

1 construed as requiring that the node “transmits wireless data communications on a paging system
2 that operates independently from a telephone network.” Order Construing Claims at 9. Apple
3 presented substantial evidence that the accused devices did not operate independently from a
4 telephone network because the GPRS and LTE networks share resources with, and are dependent
5 on, the GSM network.

6 GPNE’s theory of the case was that the GPRS, EDGE, and LTE networks could be
7 considered “paging networks” that share resources with, but are independent from, the GSM
8 telephone network. The Court allowed GPNE to proceed to trial on this theory, finding disputed
9 issues of fact as to whether the networks were independent and thus denying summary judgment.
10 Order on Summary Judgment at 11–16.

11 At trial, both parties presented testimony about independent networks. Apple cites to
12 testimony from both Dr. Dinan and Dr. Wilson in support of the jury’s finding of
13 noninfringement. Specifically, Dr. Dinan agreed that the GPRS network would “fall down” if the
14 GSM resources were removed. Tr. at 692:12–21. Furthermore, Dr. Dinan’s own tests showed that
15 GSM signals, i.e. telephone signals, were used for sending the “immediate assignment message,”
16 which Dr. Dinan mapped onto the “first grant signal” limitation of the claims. Tr. at 637:11–21.
17 Apple’s counsel pressed Dr. Dinan on this issue and elicited further testimony:

18 Q: And you used this slide [Dr. Dinan’s slide 143] to try to suggest
19 to the jury that the Apple iPhone 4S had a first grant signal; right?

20 A: Yes, immediate assignment message.

21 Q: And that first grant signal, or immediate assignment message, is
22 part of a, in your view, a paging system that operates independently
23 from a telephone network; right?

24 A: That’s exactly right.

25 Q: We agreed a few minutes ago that GSM is a telephone
26 technology; right?

27 A: That is correct.

1 Q: And, yet, the very signal that you rely on is a GSM L3 signal;
right?

2 A: Yes. This is GSM layer 3 signal. This is message shared by both
3 GSM and GPRS. No matter what you call it, it's a message that is
4 shared by both technologies. As you see, I'm testing GPRS
technology, but GSM layer 3 shows up here.

5 Tr. at 702:7–22. Thus, based on Dr. Dinan's own test results the jury could have reasonably
6 concluded that GSM and GPRS do not operate independently.

7 Dr. Wilson further testified that LTE would not work without GSM resources:

8 Q: What happens if we were to remove the cellular telephone
9 network components that are shown here in this diagram from DTX
10 142?

11 A: Your phone would not work.

12 Q: What about the data capabilities of my phone, the GPRS, EDGE,
and LTE capabilities?

13 A: That would not work.

14 *Id.* at 1180:17–23. The jury could have reasonably relied on Dr. Wilson's and Dr. Dinan's
15 testimony to find noninfringement.

16 GPNE argues that no reasonable juror could have found that the GPRS and LTE networks
17 are dependent on GSM because (1) Apple improperly defined GPRS and LTE as telephone
18 networks and (2) Dr. Wilson admitted that GPRS and LTE were capable of operating
19 independently. GPNE JMOL Reply Br. at 13–14. The Court does not find either of these
arguments persuasive.

20 First, Apple did not “define” GPRS and LTE as telephone networks. GPNE points to
21 Apple's statements that the accused devices access the GPRS and LTE systems through cellular
22 phone carriers like AT&T, Verizon, and T-Mobile. Tr. at 211:11–14; *id.* at 1145:12–18. These
23 statements did not “define” the GPRS and LTE systems as cellular systems, it was simply
24 testimony from Apple that the only way the accused devices could operate on the GPRS and LTE
25 systems was through a telephone network, i.e., the devices did not operate independently from a
26 telephone network. Furthermore, GPNE did not make any objection to this testimony.

Second, Dr. Wilson did not concede that GPRS and LTE could operate independently of a telephone network. GPNE cites the following testimony from Dr. Wilson:

Q: Right? And so what that's telling you is you could build just a GPRS network, a data network, by itself without implementing the circuit switched telephone network; correct?

A: Well, if you implemented a GPRS network, you would need GSM technology to do that and you would need GSM protocols. So you would need GSM infrastructure to do it because it's based on GSM.

Q: But you wouldn't need a circuit switched telephone network to go along with it, would you?

A: You wouldn't need to connect to the PSTN [public switched telephone network] necessarily if you're just doing data transfer.

Tr. at 1280:12–22. This testimony does not concede that GPRS is independent from GSM, only that GPRS may be used without connecting to the public switched telephone network, the “PSTN.” The PSTN is only one example of a telephone network, a “circuit switched” “telephone network.” Tr. at 1279:17–18. “Circuit switched” networks involve a “dedicated . . . line” between two users, where the “time slot and frequency [are] allocated to the entire period of the call.” Tr. at 527:9–19 (Dr. Dinan direct). GPNE contrasted “circuit switched” networks like the PSTN with GPRS, EDGE, and LTE, which use “packet switching” technology where “time slots and frequencies or any type of network resources are reserved only for transmission of packets and then . . . released.” Tr. at 528:21–529:15. The testimony GPNE elicited from Dr. Wilson is limited to showing that it is possible to send data over the GPRS network without connecting to one specific type of telephone network: the PSTN. The testimony does not establish that GPRS is independent of all telephone networks, such as GSM. Dr. Wilson previously testified extensively that the “GPRS, EDGE and LTE protocol[s are] dependent upon cellular telephone network components.” *Id.* at 1185:8–11. Additionally, as discussed below, Dr. Wilson testified that the Patent Office found that GPNE's packet-switched versus circuit-switched argument was irrelevant to whether a network is a “paging” network or a “telephone” network.

GPNE next cites testimony that it argues establishes that the LTE network operates independently of the GSM network. GPNE JMOL Reply Br. at 14, citing Tr. at 1277:19–1282:24. GPNE highlights testimony in which Dr. Wilson confirms the contents of certain statements within DTX 400, an ETSI standard. This testimony concludes with the following: “Q: What it [DTX 400] says is you can implement an LTE data network without deploying a circuit switched network along with it; isn’t that right? A: That’s what it says, yes.” Tr. at 1282:21–24. GPNE’s argument thus assumes that telephone networks must be circuit switched, but Dr. Wilson disagreed with this argument. *Id.* at 1282:5–6. In other words, GPNE’s argument relied on the proposition that all telephone networks are circuit switched, data networks such as LTE and GPRS operate independently of circuit switched networks, and therefore, LTE and GPRS operate independently of telephone networks. However, Dr. Wilson testified that “LTE is a telephone system and it’s packet switched,” which directly contradicts the assumption that all telephone systems must, by definition, be circuit switched. Tr. at 1282:5–6.

Furthermore, Dr. Wilson’s earlier testimony on direct also confirmed that neither she, nor the Patent Office, found GPNE’s packet-switched versus circuit-switched distinction relevant to the determination of whether a network is a “paging” or “telephone” network:

Q: All right. Did the Patent Office make any – or did GPNE make any particular arguments about the difference in paging systems and telephone networks?

A: They also referred to this idea of packet switch versus circuit switch.

Q: And what was the Patent Office’s reaction to that circuit switch versus packet switch distinction that GPNE was trying to make?

A: The packet – the Patent Office said that that argument was irrelevant. They pointed out that there was no packet switching in the claims, so they did not buy that argument.

....

Q: Dr. Wilson, what did you take from this statement from the Patent Office?

1 A: So what I took from that was that the issue of packet switching
and circuit switching was a non-issue. It was irrelevant.

2 Tr. at 1141:2–12; 1143:4–8 (objection omitted). In sum, the jury could have reasonably relied on
3 (1) Dr. Wilson’s testimony that LTE is both a telephone network and uses packet switching
4 technology, which undermined the premise of GPNE’s argument that all telephone networks must
5 use circuit switching technology, or (2) on Dr. Wilson’s testimony that GPRS, EDGE, and LTE
6 “would not work” without the GSM network, which directly contradicted GPNE’s claim that
7 GPRS, EDGE, and LTE operate independently of the telephone network. Tr. at 1180:9–1181:4.

8 Accordingly, the Court concludes that a jury verdict of noninfringement based on the
9 “operates independently” limitation is supported by substantial evidence. *See Callicrate*, 427 F.3d
10 at 1366.

11 3. “Count Value”

12 The Court now turns to the second claim limitation that Apple identifies as one on which
13 the jury could have reasonably relied in its finding of noninfringement: “count value.”

14 The term “count value” appears in both the ’492 and ’954 Patents. The Court construed
15 count value as “the number of consecutively related packets emanating from a transmitter.” Order
16 Construing Claims at 25. As described in this Court’s claim construction order, the references to
17 count value in the claims assume that the count value, i.e., the total number of packets in a
18 message, is transmitted “to enable a receiving node in the plurality of nodes to determine when the
19 first data packets being transmitted together are completely received.” ’267 Patent at 17:14–19;
20 *see also* ’954 Patent at 17:32–36. Indeed, the purpose of the count value is to allow the receiving
21 node to determine when the last data packet in a transmission has been received, which the count
22 value accomplishes by including a static number representing the total number of packets in a
23 message. *See* Order Construing Claims at 25. GPNE contends that the GPRS countdown, with
24 which the accused GPRS devices must be compatible, satisfies the “count value” limitation.

25 The Court finds that Apple provided substantial evidence that a GPRS countdown is not a
26 “count value,” nor is it information related to a “count value.” At trial, Apple’s expert, Dr. Wilson,

1 testified that the GPRS countdown is a flag that indicates when transmission of a message is
 2 complete. *See* Tr. at 1227:3–1230:3. When a message transmission is nearing its end, i.e., when
 3 the remaining number of data blocks remaining to be sent and received falls below a preset
 4 threshold, the GPRS countdown identifies the number of remaining blocks and begins “counting
 5 down” in each packet sequentially. Tr. at 1227:3–1228:3. Prior to that point, the GPRS countdown
 6 is always set to 15, regardless of the number of remaining blocks. Tr. at 1227:7–13. Dr. Wilson
 7 further testified that the count value in GPNE’s patents described a static number representing the
 8 total number of packets in a message. Tr. at 1228:7–14. At trial, Dr. Wilson illustrated this
 9 distinction by describing a message containing 7 blocks of data: using a count value would result
 10 in the number 7 being included with each packet of data, but with a GPRS countdown, the first
 11 several packets would include the number 15, until the transmission hit a preset threshold of 5
 12 blocks remaining, and then each packet of data would include the dynamic number of blocks
 13 remaining, e.g., 5, 4, 3, 2, 1. Tr. at 1227:3–1228:17; *see also* ADX 380, 382, 383.

14 GPNE does not dispute that the GPRS countdown is “not the equivalent to a countdown
 15 value,” but argues that the GPRS countdown value is “calculated using information relating to the
 16 total number of packets.” GPNE JMOL Br. at 24. According to GPNE, the fact that the GPRS
 17 countdown value contains information relating to the total number of consecutively related data
 18 packets is sufficient to satisfy the “count value” limitation. However, GPNE concedes that Dr.
 19 Wilson testified that it would be “impossible” to determine the total number of packets from the
 20 GPRS countdown, as that information is never transmitted. Tr. at 1229:14–18. According to Dr.
 21 Wilson, the GPRS countdown would never transmit a number representing the total number of
 22 packets in a message, only the number remaining when the message hit the preset threshold
 23 number. *Id.* The count value limitation, as construed, requires that the total number of packets in a
 24 transmission be transmitted to the receiver, “to enable a receiving node in the plurality of nodes to
 25 determine when the first data packets being transmitted together are completely received.” ’267
 26 Patent at 17:14–19. The jury could have reasonably concluded, based on Dr. Wilson’s testimony,

1 that the GPRS countdown does not transmit the total number of consecutive packets in the
2 transmission to the receiver.

3 The Court therefore concludes that a jury verdict of noninfringement based on the count
4 value limitation is supported by substantial evidence. *See Callicrate*, 427 F.3d at 1366.

5 **4. Aligning/Clocking Signal**

6 Next, the Court addresses the third claim limitation that Apple contends the jury could
7 have reasonably relied upon in its finding of noninfringement: “aligning/clocking signal.”

8 The term “clocking signal” also appears in both the ’492 and ’954 Patents. The Court
9 construed clocking signal as “a signal that, among other things, contains timing information used
10 for allocating resources.” Order Construing Claims at 54. Dr. Dinan testified that because the
11 accused Apple devices use the GSM and LTE standards, both of which include synchronization
12 channels, the accused devices met this limitation. *See, e.g.*, Tr. at 599:12–25. As to GPRS
13 products, Dr. Wilson testified that the accused Apple devices do receive a GSM synchronization
14 burst (“GSM SCH burst”), but that this signal is distinct from a clocking or aligning signal as
15 described by GPNE’s patents. Tr. at 1221:1–8. Dr. Wilson provided two bases for this conclusion:
16 (1) that GPNE made statements differentiating the GSM SCH burst from the aligning/clocking
17 signal during the February 2013 reexamination of the ’492 Patent; and (2) that the GSM SCH
18 burst is a telephone signal. Tr. at 1218:3–1220:24; 1221:1–8.

19 With regard to the GPRS products, GPNE contends that Dr. Wilson’s testimony relied
20 solely on GPNE’s statements during the February 2013 reexamination allegedly disclaiming the
21 GSM “SCH burst.” *See* GPNE JMOL Br. at 24–25. As a threshold matter, the Court previously
22 concluded that GPNE “distinguish[ed] its clocking signal from the ‘synchronization
23 channel’/’SCH’ ‘burst,’ a specific concept found in certain prior art.” Order Construing Claims at
24 56. The Court further concluded that although that was the case, the Court was not persuaded that
25 GPNE had “generally disclaimed” that the clocking/aligning signal could be used to synchronize
26 devices with the controllers. *Id.* The Court construed clocking/aligning signal such that whether

other synchronization signals used in the GSM and LTE standards satisfied the limitation would be a question of fact for the jury to decide. The parties' experts agreed that the accused GPRS devices must receive the GSM SCH burst to comply with the GSM standard, but disagreed as to whether the GSM SCH burst conformed to the Court's construction of clocking/aligning signal. In light of conflicting expert testimony, the jury "was free to credit or discredit that testimony in rendering a verdict," and to consider GPNE's statements during the reexamination in deciding whether the GSM SCH burst satisfied the clocking/aligning signal limitation. *See Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1309 (Fed. Cir. 2011). Moreover, Dr. Wilson also explained that the GSM SCH burst is a telephone signal and thus does not satisfy the aligning/clocking limitation. Tr. at 1214:9–16.

GPNE does not raise any specific arguments as to the sufficiency of Dr. Wilson's testimony as to the accused LTE devices, but instead relies generally on Dr. Dinan's testimony to the contrary. *See* GPNE JMOL Br. at 24–25. As to the LTE accused products, Dr. Wilson testified that LTE synchronization involves two synchronization signals sent on 72 different frequencies. Tr. at 1222:2–10. According to Dr. Wilson, these two synchronization signals are insufficient to perform the claimed synchronization function. Tr. at 1222:23–1223:3. Dr. Wilson testified that the clocking/aligning signal, as construed by this Court, required multiple signals to perform the function of allocating resources, and that the two LTE synchronization signals were incapable of performing that function. Tr. at 1223:8–24. Dr. Wilson further explained that the LTE synchronization process would require different hardware than required for the clocking/aligning signal and would consume wider bandwidth. Tr. at 1223:25–1224:11. The jury could have reasonably concluded that neither the GPRS nor LTE accused products satisfied the clocking/aligning signal limitation based on Dr. Wilson's testimony.

In sum, the Court finds that there was substantial evidence to support a jury verdict of noninfringement as to the clocking/aligning signal limitation.

5. Differing Frequencies

1 The Court now turns to the fourth and final claim limitation that Apple argues the jury
2 could have relied upon in finding noninfringement: “differing frequencies.”

3 The term “four differing frequencies” appears in both the ’492 and the ’954 patents.¹³ The
4 specification describes the use of “four local frequencies for transmissions between pager units
5 and a central control station.” *See* ’492 Patent at 1:66-2:1. As set forth in the specification,
6 frequencies one and two are used to transmit downstream, from the control station to the paging
7 unit, while frequencies three and four are used to transmit upstream, from the paging unit to the
8 control station. *See id.* at 1:66–2:9. This four frequency system enables two-way data
9 communications between the paging unit and the control station. *Id.* at 1:66–2:9.

10 Apple’s noninfringement defense as to the “differing frequencies” limitation rested on the
11 argument that the accused devices do not send and receive the four signals disclosed in the
12 Asserted Patents, nor do the accused devices use a discrete frequency for each signal. Tr. at
13 1205:12–1206:15. At trial, Dr. Wilson testified that the four differing frequencies limitation
14 appeared in each claim asserted, not only Claim 44. Tr. at 1206:10–12. Using Apple
15 Demonstrative ADX-359, Dr. Wilson identified the four discrete signals described in the GPNE
16 patents (clocking signal, first request signal, authorization signal, and communication message),
17 and explained that LTE uses orthogonal frequency division multiplexing (“OFDM”), which
18 involves sending multiple signals simultaneously over 72 separate frequencies. Tr. at 1209:16–
19 1212:7. Rather than transmitting four discrete signals over four different frequencies, LTE sends
20 “several signals,” simultaneously over 72 frequencies. *Id.*; *see also* Apple Demonstrative 364 (and
21 corresponding animation). According to Dr. Wilson, the LTE downlink and uplink signals engage
22 in frequency hopping and do not conform to the four differing frequencies approach, as described
23 in the asserted claims. Tr. at 1212:9–17.

24 GPNE raises two arguments: (1) that Dr. Wilson focused solely on the language of Claim
25

26 ¹³ The Court did not construe the term “differing frequencies.” At *Markman*, the parties agreed to
27 the construction of “frequency” as “a number expressed in hertz.” Order Construing Claims at 19.

44, even though Claim 22 was the only claim asserted against the LTE devices; and (2) that Claim 22 “does not require four exact frequencies.”¹⁴ GPNE JMOL Br. at 25.

As to GPNE’s first argument, the Court finds that Dr. Wilson testified that the four differing frequencies used to transmit the four signals recited in Claim 44 were also a limitation in Claim 22. Tr. at 1206:3–12. The language of the claims supports this interpretation. Claim 13 of the ’954 Patent, from which Claim 22 depends, requires “wherein each of the clocking signal, the first request signal, the authorization signal, and the communication message are transmitted on **differing frequencies**.” (emphasis added). Claim 37 of the ’492 Patent, from which Claim 44 depends, requires “wherein the first frequency, the second frequency, the third frequency and the fourth frequency are **differing frequencies**.” (emphasis added). The parties treated the four signals in the same manner for purposes of infringement, and it is unclear why the “differing frequencies” limitation in each claim would not also be treated as the same. While Dr. Dinan later stated without explanation that the differing frequencies requirement in Claim 22 was distinct from the differing frequencies requirement in Claim 44, *see* Tr. at 1558:12–15, during his initial testimony regarding the differing frequencies requirement, Dr. Dinan described it as “a limitation like before,” and then proceeded to list the four distinct signals and the requirement that the signals be “transmitted on differing frequencies so they won’t interfere.” Tr. at 587:19–588:4. Dr. Dinan also explained the sequence of each signal. *See* Tr. 586:20–587:18 (describing the first signal, “next signal,” “what happens after that,” and “what is the final step”). Tr. at 586:20–587:18. Moreover, GPNE provides no citation to, and the Court did not find, any testimony from Dr. Dinan explaining why Claim 22 would not require four different signals, one for each of the four separate signals.

¹⁴ GPNE did not address whether Apple presented sufficient evidence to support a jury finding of noninfringement based on the “differing frequencies” limitation with regard to GPRS products until its reply brief. *See* GPNE JMOL at 25; GPNE JMOL Reply at 15; *see also* Apple JMOL Opp. at 10. The Court declines to entertain an argument raised for the first time in GPNE’s reply brief, especially in such a cursory manner. *See, e.g., Novosteel SA v. U.S., Bethlehem Steel Corp.*, 284 F.3d 1261, 1273–75 (Fed. Cir. 2002).

Furthermore, to the extent GPNE now contends for the first time that the differing frequencies limitation requires only a minimum of four frequencies, rather than four exact frequencies, the Court notes that this argument is ultimately unavailing. Dr. Wilson also testified that LTE ODFM sends multiple signals out simultaneously on 72 different frequencies and uses “frequency hopping,” which would allow two or more signals to transmit in the same frequency. Tr. at 1209:16–1212:7. Dr. Wilson contrasted LTE ODFM to the differing frequencies limitation based not only on the difference in number, 4 or 72, but also based on the simultaneous transmission and frequency hopping. *Id.* The jury could have reasonably concluded, based on Dr. Wilson’s testimony, that the accused LTE devices did not meet the differing frequencies limitation.

In sum, the Court concludes that a jury verdict of noninfringement based on the four limitations discussed above is supported by substantial evidence. *See Callicrate*, 427 F.3d at 1366. The Court also finds that the jury could have reasonably concluded that GPNE failed to satisfy its burden of proof as to infringement because the jury discredited GPNE’s expert as to infringement. The Court therefore denies GPNE’s motion for judgment as a matter of law as to infringement, or in the alternative, for a new trial.

IV. APPLE’S MOTION FOR JUDGMENT AS A MATTER OF LAW AS TO INDEFINITENESS

Apple renews its motion for judgment as a matter of law as to invalidity based on indefiniteness. ECF No. 574, Apple Indefiniteness JMOL at 2. The Court allowed the parties to engage in supplemental expert discovery on indefiniteness in light of the Supreme Court’s decision in *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120 (2014). *See* ECF No. 327 (Pretrial Conference Order) at 2. The Court noted that “[a]ny indefiniteness issues will be decided by the Court, and not tried to the jury.” *Id.* The parties stipulated to Apple preserving its defense until after trial. *See* ECF 576 (GPNE Indefiniteness Opp.) at 2. Apple now moves for judgment as a matter of law based on indefiniteness because a person “of ordinary skill in the art could not

determine the scope of the phrase ‘randomly generated information’ with reasonable certainty.”
Apple Indefiniteness JMOL at 2.

A. Legal Standard on Indefiniteness

Under 35 U.S.C. § 112, ¶ 2 (2006 ed.),¹⁵ a patent must “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as [the] invention.” Section 112, ¶ 2 includes what is commonly called the “definiteness” requirement. *Nautilus*, 134 S. Ct. at 2125. Prior to the Supreme Court’s decision in *Nautilus*, the Federal Circuit applied an “insolubly ambiguous” standard to indefiniteness questions. *See, e.g., Datamize, LLC v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347 (Fed. Cir. 2005). Under the insolubly ambiguous standard, a claim failed to meet § 112, ¶ 2, and was indefinite only when it was “not amenable to construction” or “insolubly ambiguous.” *Id.* In *Nautilus*, the Supreme Court rejected the insolubly ambiguous standard and replaced it with a “reasonable certainty” standard, holding that “a patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus*, 134 S. Ct. at 2124. In addition to the specification, “an ordinarily skilled artisan must consult the prosecution history to confirm the proper understanding of a claim term’s meaning, especially if other aspects of the inquiry raise questions.” *Ancora Techs., Inc. v. Apple, Inc.*, 744 F.3d 732, 738 (Fed. Cir. 2014).

The Court therefore reviews the claims, specification, prosecution history, and extrinsic evidence to determine whether the claims “inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus*, 134 S. Ct. at 2124. Indefiniteness renders a claim invalid, and must be shown by clear and convincing evidence. *See Halliburton Energy Servs. v. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008); *cf. Nautilus*, 134 S. Ct. at 2130 n.10.

¹⁵ Paragraph 2 of 35 U.S.C. § 112 was replaced with newly designated § 112(b) when § 4(c) of the America Invents Act (“AIA”), Pub. L. No. 112-29, took effect on September 16, 2012. Because the applications resulting in the patents at issue in this case were filed before that date, the Court refers to the pre-AIA version of § 112.

B. The Term “Randomly Generated Information” is Not Indefinite

Claim 44 of the ’492 Patent and Claims 19 and 22 of the ’954 Patent require that the “node” receive “randomly generated information.” The Court construed that phrase as “information that is randomly generated.” Order Construing Claims at 19–24. Apple contends that the asserted claims are invalid for indefiniteness because one of ordinary skill in the art could not determine what degree of “randomness” is necessary to satisfy the construction, or how to generate that “random” information.

1. The Claims Are Not Indefinite For Failing to Specify a Degree of Randomness

The Court begins by examining the claim language itself. Claim 19 of the ’954 Patent provides:

19. The first node of claim 18, wherein the interface is further controlled by the processor to:

transmit randomly generated information created by the first node; and

receive said randomly generated information returned from the communication controller to enable identification of the first node.

’954 Patent, cl. 19. The claim thus describes “randomly generated information” that is used for the purpose of enabling identification of the first node.¹⁶ Therefore, the appropriate inquiry here is whether one skilled in the art would, in light of the specification, be able to determine the scope of the claims with reasonable certainty, given that the randomly generated information must be sufficient to enable identification of the first node. *Nautilus*, 134 S. Ct. at 2124; *see also Biosig Instruments, Inc. v. Nautilus*, 783 F.3d 1374 (Fed. Cir. 2015) (*Nautilus* remand).

Apple argues that one of ordinary skill in the art could not determine what degree of “randomness” is necessary to satisfy the construction. At trial, Apple’s expert, Mr. Rysavy, testified that “randomly generated information” encompasses various types of information, of

¹⁶ Apple attempts to ignore this qualifier by arguing that “randomly generated information” is used in the claims without this limitation. *See* ECF No. 581 (Apple Indefiniteness Reply) at 2. This is not persuasive, as the purpose of the randomly generated information is clear from the claim.

1 varying degrees of randomness. Tr. at 1359:11–1360:6. According to Mr. Rysavy, “randomly
 2 generated information” encompasses nondeterministic information, random information produced
 3 using non-computer methods, and random information deterministically produced using computer
 4 methods. *Id.* Mr. Rysavy explained that it would be “extremely difficult” to generate completely
 5 random information. *Id.* Moreover, Apple contends that the phrase “randomly generated
 6 information” is subjective because a skilled artisan would recognize that “different applications
 7 may require a different level of ‘randomness.’” Apple Indefiniteness JMOL at 6. As Apple
 8 explains it, as the number of pagers in the system increase, the corresponding degree of
 9 randomness would also have to increase. Apple Indefiniteness Reply at 3.

10 Apple’s indefiniteness arguments assume that “randomly generated information” is a term
 11 of degree. Apple is incorrect. The claims require that the information be random, but do not
 12 require any particular degree of randomness. Apple appears to argue that the mere fact that
 13 randomness can be described in degrees renders the term “randomly generated information” a
 14 term of degree. However, Apple fails to identify any indication in the claim language itself that the
 15 degree of randomness is relevant to the scope of the claims.¹⁷ The Court finds no other indications
 16 that “randomly generated information” is a term of degree, such as the presence of a qualifier such
 17 as “relatively” or “substantially.” *See, e.g., Datamize*, 417 F.3d at 1351 (noting “substantially
 18 equal to”, “about”, and “substantial absence” are terms of degree), *abrogated on other grounds by*
 19 *Nautilus*, 134 S. Ct. 2120; *see also Affymetrix, Inc. v. Hyseq, Inc.*, 132 F. Supp. 2d 1212, 1229
 20 (N.D. Cal. 2001) (identifying “about,” “relatively,” “partially,” and “substantially” as terms of
 21 degree).

22 Moreover, even if the Court agreed with Apple that “randomly generated information” is a

23
 24 ¹⁷ The Court notes that Apple itself appeared to understand “randomly” to be an attribute that is
 25 either present or not, rather than a term of degree. At *Markman*, Apple argued for “randomly
 26 generated information” to be construed as “identification of the *randomly* selected timeslot.”
Markman Tr. at 19 (emphasis added). Apple seemed to have no difficulty understanding the scope
 of “randomness” in that context.

term of degree, that would not alter the Court’s conclusion that the claims are not indefinite. As the Federal Circuit explained in *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370 (Fed. Cir. 2014), terms of degree are not inherently indefinite and “absolute or mathematical precision is not required.” So long as the claims, when viewed in light of the specification and prosecution history, provide “objective boundaries” for those of skill in the art, the claims are not indefinite. *Id.* at 1371.

In the instant case, the Court concludes that GPNE was not required to list all possible degrees of randomness or methods of generating random information in order to satisfy § 112, ¶ 2. As implied by Apple’s own argument, it is evident from the specification that the claims may encompass more or less complicated systems that would require varying degrees of randomness. *See, e.g.*, ’492 Patent at 1:66–2:17.

Moreover, as GPNE explains, it would be evident to a person skilled in the art that the specific degree of randomness is not relevant to understanding the scope of the claims. *See Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1575–76 (Fed. Cir. 1986). That GPNE’s claims encompass situations involving both lesser and greater degrees of randomness goes to the breadth of the claims, not their definiteness. Apple cannot contest that breadth of scope is not equivalent to indefiniteness. “Merely claiming broadly” does not “prevent the public from understanding the scope of the patent.” *Ultimax Cement Mfg. Corp. v. CTS Cement Mfg. Corp.*, 587 F.3d 1339, 1352 (Fed. Cir. 2009); *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1341 (Fed. Cir. 2005) (“[B]readth is not indefiniteness.” (quotation and citation omitted)). A broad claim can be definite even where there is no precise numerical boundary so long as a person of skill in the art can determine the scope with reasonable certainty. *See Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1335 (Fed. Cir. 2010); *Nautilus*, 134 S. Ct. at 2124.

In addition to the clarity provided by the claims and specification, Apple’s expert, Mr. Rysavy, appeared to have little difficulty understanding the scope of the term “randomly generated information” during his testimony regarding obviousness. When asked whether he could find a

1 signal including “random information” in the prior art, Mr. Rysavy stated “yes” and identified
 2 “five bits of random information, which is a way of temporarily identifying the phone.” Tr. at
 3 1358:21–1359:2. Mr. Rysavy did not hesitate, qualify, or otherwise evince uncertainty in
 4 identifying this limitation in the prior art, and identified it with more than reasonable certainty.

5 Mr. Rysavy’s testimony supports the conclusion that a person skilled in the art can
 6 determine the scope of this term, as he was able to confidently identify GSM prior art that met the
 7 “randomly generated information” claim element. Tr. at 1360:17–21 (“The GSM prior art provides
 8 sufficient information to address [the randomness] claim element.”). This testimony suggests that
 9 a person skilled in the art could determine, with reasonable certainty, the scope of GPNE’s claims.
 10 *See Nautilus*, 783 F.3d at 1382 (applying “reasonable certainty” standard to conclude that an
 11 “ordinarily skilled artisan” would understand the scope of the invention based on intrinsic and
 12 extrinsic evidence); *see also Rosemount, Inc. v. Beckman Instruments, Inc.*, 727 F.2d 1540, 1547
 13 (Fed. Cir. 1984); *see also Chiron Corp. v. Genentech, Inc.*, No. CIV.S-00-1252 WBSGGH, 2002
 14 WL 32123928, at *5 (E.D. Cal. June 24, 2002).

15 In opposition, Apple argues that Mr. Rysavy testified only to the prior art equivalent to the
 16 allegedly infringing products and did not actually interpret “randomly generated information.”
 17 Apple Indefiniteness Reply at 8–9. This argument is belied by the substance of Mr. Rysavy’s
 18 testimony, which directly compared the prior art to the claim terms. In order to determine whether
 19 the claims were invalid due to the identified prior art, Mr. Rysavy had to compare the prior art to
 20 the claims. Although Mr. Rysavy testified as to the complexity of defining “randomly generated
 21 information” in the abstract, he was clearly able to identify that same randomly generated
 22 information in the GSM prior art. Tr. at 1358:21–1359:2, 1360:17–21. Mr. Rysavy’s ability to
 23 testify as to his opinion that GPNE’s claims were invalidated by prior art strongly supports the
 24 inference that Mr. Rysavy understood the scope of “randomly generated information.”

25 As discussed above, the Court concludes that “randomly generated information” is
 26 sufficiently clear to provide “clear notice of what is claimed,” i.e., the information used must be

random, and it must enable identification of the first node. *See, e.g.*, '954 Patent, Cl. 19.

2. Apple's Arguments Related to "Generating" Random Information go to Enablement, not Indefiniteness

Finally, the Court notes that much of Apple's argument and Mr. Rysavy's testimony focused on the claims' supposed failure to disclose *how* to generate the random information required. *See, e.g.*, Apple Indefiniteness JMOL at 6 ("The GPNE patents fail to define . . . how a person of ordinary skill would go about 'randomly generat[ing] information.'"); Tr. at 1359:17–1360:6 (Q: "And does the patent tell us anything about how to [generate random information]?" A: "It does not."). Based on Apple's arguments, the Court agrees with GPNE that Apple's contention is nothing more than a veiled attempt to argue enablement. As Apple's argument is based on enablement, rather than indefiniteness, it is not appropriate for resolution in this motion. *See, e.g.*, *Augme Technologies, Inc. v. Yahoo! Inc.*, 755 F.3d 1326, 1340 (Fed. Cir. 2014) (rejecting purported indefiniteness challenge because it was an enablement argument). The Court granted GPNE's motion for JMOL on an enablement defense based on Apple's failure to present any evidence as to enablement during trial and Apple's decision not to oppose GPNE's JMOL motion as to enablement. *See* ECF No. 576. Having conceded that argument during trial, Apple may not now use an indefiniteness challenge to argue enablement.

The Court does note that the patent does not claim a means to randomly generate information, and Apple does not otherwise explain why the patents must disclose such a means in order to make the term "randomly generated information" definite. As both parties note, the use of randomly generated information was well known at the time of the invention. *See* Apple Indefiniteness Reply at 3 (discussing Heide patent, DTX 23); GPNE Indefiniteness Opp. at 10–11 (also discussing Heide patent). The Court therefore can find no reason why the Asserted Patents' failure to disclose how to randomly generate information impacts one's ability to determine, with reasonable certainty, the scope of the claims.

In sum, the Court concludes that a person of ordinary skill in the art could determine with

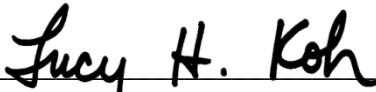
1 reasonable certainty the scope of GPNE's claims and their reliance on "randomly generated
2 information." The Court therefore denies Apple's motion for judgment as a matter of law as to
3 indefiniteness. *Biosig*, 783 F.3d at 1384.

4 **V. CONCLUSION**

5 For the reasons stated above, the Court DENIES GPNE's motion for judgment as a matter
6 of law, or in the alternative a new trial, and DENIES Apple's motions for judgment as a matter of
7 law.

8 **IT IS SO ORDERED.**

9 Dated: June 9, 2015

10 
11 LUCY H. KOH
12 United States District Judge

United States District Court
Northern District of California